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BALTIMORE, NOVEMBER 3, 1910.

TRAIN STILL UNRIVALED.

Despite the marvels in human regeneration accomplished in this country and in Europe, and especially in this country and at night, the late George Francis Train, with his Psychic Key, has not yet been touched as an all-potent one. Salvation of the country really depends upon some recognized inmate of an insane asylum taking charge of affairs.

BUSTIN' THE BAR'L.

The New Nationalism is simply a later stage in the development of a continually developing Nationalism. The relation between the States and the National Government was not settled once for all by the written Constitution, and could not be. The Constitution is not like the hoops of a barrel that hold the staves together. Hoops fitted for a Larrel of thirteen staves would not serve for a barrel of forty-eight. It is like the bark of a tree that grows with the growth of the tree and expands with its expansion.

Thus Lyman Abbott introduces his interpretation of the shibboleth adopted by his Contributing Editor. The interpreter, in using his homely figures of the barrel and staves, a creation of man, and the tree, a natural growth, reveals his lack of knowledge of the Constitution he mentions. That instrument had more of the character of the barrel hoops than of the tree. In encircling the 13 staves with the hoops the framers, in wisdom based upon knowledge of history and of human nature, expressly provided for an enlargement of the hoops to accommodate an increasing number of staves. They looked for a continually developing Nationalism, but they did their level best to assure development upon an orderly adjust-

ment of the hoops, and not through a smashing of the barrel. They marked the difference between a healthy evolution in Government through the operation of Law measured by the Constitution and a series of revolutions in Government under the sway of the Mob-mind.

THE NEVER-ENDING QUEST FOR COAL.

While it is true that there are at present few railroad-construction plans of magnitude under way in the South as compared with almost any other of recent years, it is nevertheless a fact that sundry extensions to coal lands are either in progress or projected for immediate execution, showing that the quest for fuel supply continues unsatisfied and uninterrupted.

Only a few weeks ago contracts were let for an extension of nearly 90 miles on the Lexington & Eastern Railroad in Kentucky for the purpose of opening up coal properties in the eastern part of that State. At the same time it is contemplated to build another large coal road, perhaps in the way of an extension of the Cincinnati, Hamilton & Dayton Railway, also in the same section of Kentucky. Meanwhile an important coal extension is being built from a connection with the Louisville & Nashville Railroads at Wasioto, Ky. This line is now progressing to Harlan Court House, but is projected beyond there, along the other side of Pine Mountain, from the extension of the Lexington & Eastern road. There are also several other coal lines contemplated in the same State and awaiting financial or other arrangements to put them through. There are many rumors afloat of great coal deals in Eastern Kentucky, the closing of which will necessitate great activity in railroad construction in that section. One deal, involving 100,000 acres, will probably bring upon a very heavy development of coal-mining and coke-making in the Elkhorn field, where better coke can be made than in the Connellsville region. Another report refers to negotiations for 95,000 acres in the same general territory, while several other large deals are being considered.

As for West Virginia, there is never any cessation in the search for more coal or the projection and construction of railroads to develop it. The Buckhannon & Northern line is apparently about to be revived and completed. This is the scheme of the Little Kanawha syndicate, in which the Pittsburg & Lake Erie, the Pennsylvania and the Baltimore & Ohio railroads are interested. The proposed line will follow the Monongahela River from a connection with the Belington & Northern past Clarksburg and Fairmont, W. Va., running northward and connecting with the Monongahela Railroad at Brownsville, Pa. There are vast coal properties along this route, and it only remains for the big railroads interested to give the word to insure its construction. As for the other plans in this State, noted in detail in the MANUFACTURERS

RECORD, they are too many to be enumerated here.

It is a long way from West Virginia to Texas and Oklahoma, but in those distant States the search for coal proceeds nearly, if not quite, as persistently and unweariedly as in the East. Recent statistics show that the coal and lignite output in Texas increases largely year after year, and in Oklahoma, although new, is developing so fast that none of her natural fuel resources can long remain unreached by a railroad or untouched by a pick. There are now several companies, either building or about to start construction, that have as their aim the opening of mines.

In addition to the foregoing brief outline of what is doing in the South and Southwest to open up fuel fields, it may be remarked that the new extension of the Western Maryland Railroad between Cumberland and Connellsville may develop some mines in Maryland as well as others, which are assured of opening, across the boundary in Pennsylvania.

Coal must be had and the roads must reach it.

A VISION FOR BALTIMORE.

The report made by Isham Randolph of Chicago to a committee of Baltimore business men, suggesting that in order to relieve the congested railroad situation in this city a new tunnel be built coming in from the western part of the city under Lexington street to a central point downtown, opens up visions of great possibilities. The building of this tunnel, if this be practical from an engineering point of view, and its use by all of the railroads, and the construction in connection therewith of a great union depot, would give new life to Baltimore and completely change a great area, the complete reconstruction of which would be a blessing to the city, enhancing all values in a large district. The site would be an ideal one, easily accessible from all parts of the city.

In connection with this plan, if it prove to be practicable, should be considered the construction of the proposed broad business street over the bed of Jones Falls. This would give a new direct connection on good grades between the downtown water section of the city and the uptown districts. It might be possible, in condemning the property along Jones Falls for this improvement, to plan for a great warehouse system based on the idea of the Bush terminal in New York, or the St. Louis Warehouse Co., or the great warehouse system now stretching for over 5000 feet recently completed at Texas City on Galveston Bay. These warehouses are a necessity of modern business development. Such a string of warehouses built along this new street could be provided with railroad shipping facilities, and by a very short haul, covering only a few blocks, could reach water transportation. In fact, it would be possible to dredge out the falls for

a distance of several blocks northwest from the harbor and give the lower warehousing system the benefit of being immediately on deep water, while having railroad facilities also at hand.

In carrying out a combination plan of this kind Baltimore would immediately leap to the front as having taken a more advanced step for broad development in transportation and warehousing facilities than anything which has been achieved in the development of this city in the last quarter of a century.

MARYLAND INDUSTRIES AND THE SOUTH.

Preliminary census figures of the factories in Maryland in 1909, the first of the Southern States thus reported, suggest a few interesting speculations as to the progress made by Southern factories since 1900. The figures deal only with actual factories, and not with neighborhood industries and hand trades with an output less than \$500 a year, and so do not really cover the entire manufacturing field. Considering only the figures of the gross value of products, there has been an advance between 1904 and 1909 in Maryland from \$243,376,000 to \$317,570,000, or by \$74,194,000, equal to 30.5 per cent., and an increase since 1900 from \$211,076,000, or by \$106,494,000, equal to 50.4 per cent. The increase between 1900 and 1904 was by \$32,300,000, equal to 15.3 per cent. The increase for the whole South between 1900 and 1904 was from \$1,239,745,000 to \$1,787,976,000, or by \$548,231,000, equal to 44.6 per cent.

If the rate of increase in the whole South since 1904 shared the impetus given the rate of increase in Maryland in the same period, there has been an increase in the value of products of \$1,573,419,000, making the 1909 total \$3,336,395,000.

Another estimated total may be reached in considering Maryland's increase between 1900 and 1904 and between 1904 and 1909 in comparison with the total increase in the whole South between 1900 and 1904. The \$32,300,000 increase in Maryland in the first period constituted about 5.8 per cent. of the total \$548,231,000 increase in the South. If the same proportion was maintained in 1909, the total increase in the South was \$1,279,000,000, making the total value of products in the South \$3,067,000,000. That is not much beyond the total based upon the proportions of increases in the several Southern States in the total increase for the South between 1900 and 1904. This estimate would give the following total by States, expressed in round numbers:

Alabama.....	\$194,000,000
Arkansas.....	84,000,000
District of Columbia.....	22,000,000
Florida.....	87,000,000
Georgia.....	279,000,000
Kentucky.....	235,000,000
Louisiana.....	321,000,000
Maryland.....	317,570,000
Mississippi.....	111,000,000
North Carolina.....	269,000,000
South Carolina.....	138,000,000
Tennessee.....	239,000,000
Texas.....	277,000,000
Virginia.....	239,000,000
West Virginia.....	171,000,000
Total.....	\$3,013,000,000

It is hardly likely that the figures for 1909 will reach such proportions. In the value of factory products Maryland ranked first, both in 1900 and in 1904, among the Southern States, with Louisiana second, Kentucky third, Georgia fourth, Texas fifth, Virginia sixth, North Carolina seventh, Tennessee eighth, and Alabama ninth in 1904. In 1900 Kentucky had ranked second, with Louisiana third, Virginia fourth, Georgia fifth, Texas sixth, Tennessee seventh, North Carolina eighth, and Alabama ninth. The estimated figures in the preceding table would mean another realignment, Louisiana ranking first, with Maryland second, Georgia third, Texas fourth, North Carolina fifth, Virginia sixth, Tennessee seventh, Kentucky eighth, and Alabama ninth. It is likely that there will be some realignment, but hardly as marked as that indicated in the estimated figures, and the actual total of the value of products of all manufacturing in the South in 1909 will probably be nearer \$2,750,000,000 than \$3,000,000,000.

RAILROADS AND THEIR NEEDS.

Railroads cannot much longer remain out of the market for materials, even though some of them may have difficulty in financing for new work. The exigencies of the situation will compel them to find money for the purchase of rails and rolling stock and the betterment of tracks. Since the fall of 1907 the railroads of the country have deteriorated physically. They have not kept up with the wear and tear on track and equipment. Population has been increasing and the volume of trade has been expanding, and the railroads have not only not kept pace, they have not even stood still, but relatively they have as a whole been going backward. It is true that a great many railroads have kept up their track and their rolling stock, but, broadly speaking, this is not the case with all roads. Up to the time of the panic of 1907 the railroads of the country were so congested with traffic that it was impossible for most of them to do business to advantage. Delays in the handling of freight were so numerous as to seriously cripple many manufacturing enterprises where promptness is essential in the delivery of the raw material and the shipment of the finished product. In the passenger department more trains were late on a large proportion of the mileage of the country than were on time, and on many roads accidents due to this congested condition and to the impairment of roadbed and rolling stock made travel a constant menace to life. Since 1907 some of these difficulties have been overcome by double-tracking and by enlarged terminal facilities, but if today we had a sudden rush of business on a scale in keeping with the great activity of 1906 and the early part of 1907 the railroads would be as badly swamped as they were then, because this widespread activity would of necessity far exceed, by reason of increased population and increased consumptive requirements, the boom of 1906 and 1907.

Railroad managers have to meet a troublesome situation. On one hand they have to face the difficulty of raising new capital equal to the needs of their roads, with an uncertainty as to the ruling of the Interstate Commerce Commission on the question of freight rates. There is a possibility, judged by the logic of the situation, that the roads east of the Mississippi, whose rates probably average less than on the far

Western roads, may be permitted to make some slight increase in freight rates, but whether this be true or not it is entirely probable that they will not be required to reduce their rates unless to adjust some to a more equitable basis as to all industries and all communities. Therefore the railroads are probably safe in making calculations for a freight rate at least equal to that which now prevails, with some chance that they will get an advance.

When the President of the United States practically compelled the railroads by the power of his position not to reduce wages, he placed himself in a position that must almost compel him to use his great power to make it certain that the railroads, having been forced to maintain wages, shall now have the opportunity to recoup themselves by not being forced to reduce rates, and probably being given the opportunity to make some advances. It is to be regretted that the Presidential office should be used to interfere with the working out of economic laws in business matters merely for political effect, for sooner or later the price of such interference must be paid. If higher rates are granted to the railroads by the Interstate Commerce Commission, or if they are not compelled to reduce their rates, the country will feel that it is the result of what in effect was a bargain for political effect, the carrying out of which made the railroads refrain from cutting wages on the assurance that they would have the opportunity of advancing freight rates.

However, regardless of how these things may work out, the country is growing more rapidly than transportation facilities. Every wheel that turns on every track is wearing out, and the rail beneath it is wearing. In considering the life of a rail and the small replacement of old rails with new during the last two years, there must be a vast amount of work which needs to be done promptly. It has created a vacuum that can only be filled by the imporing of many hundreds of thousands of tons of steel rails, and the longer the delay continues the more dangerous will the vacuum become to the physical and financial safety of the railroad and to the safety of travel and the expeditious handling of traffic. The situation is a critical one from the viewpoint of the railroad. It is equally critical from the standpoint of the country's need of enlarged transportation facilities. Economic conditions must in the near future bring about great activity in railroad orders for rolling stock and rails. It should also bring an era of extension of existing lines, as well as the building of new lines.

THE USUAL RESULT.

The following letters tell the story of results secured from advertising in the Classified Opportunities department of the MANUFACTURERS RECORD so fully that no comment is needed.

J. C. Harrison, secretary Excelsior Coal & Land Co., Fort Smith, Ark., in discontinuing one advertisement, 60,000 acres of coal and timber land, explains as follows:

We are very much pleased with the results from our advertisement of the Tennessee land. We received over fifty inquiries, and have succeeded in selling this property.

Mr. W. W. Axley of Chattanooga, Tenn., writes:

I have had a sufficient number of answers from the advertisement placed with you to get into communication with a number of capitalists.

A SELF-REVEALED "CONGRESS."

In an effort, floated through the editorial columns of the New York *Commercial*, to meet the natural questions that come to a business man's mind momentarily diverted from serious things by appeals for financial support to the enterprise known as the "Southern Commercial Congress," some outgivings thoroughly characteristic of the promotion of the thing are manifest. One of them emerges in the supposed citation from a Washington interview with an "official" of the "Congress." The differences between the Washington and New York presentations are best shown in the following parallel:

(Washington Post.)	(N. Y. Commercial.)
The Atlanta conference, which was attended by ten representative business men of each of the sixteen Southern States appointed by the Governors, was an earnest, hard-working body.	The Atlanta conference was an earnest, hard-working body.

The change from the Washington form to the New York one was doubtless due to the fact that it had been discovered to the readers of newspapers that the Atlanta conference was not "attended by ten representative business men of each of the sixteen Southern States appointed by the Governors." That particular phrase was becoming risky. It had been used for weeks in the future tense in useless endeavor to persuade ten representative business men from sixteen States, whether appointed by Governors or not, to waste their time in the Atlanta scheme, promising another meeting in the spring, with "thousands" in attendance. Another characteristic promotive paragraph is as follows:

So far the expenses of the congress—about twenty months old—have been less than \$25,000; but it is no exaggeration to set the value of its work to the South at a hundred times that amount. By the chairman of the executive committee it has been figured out that \$50,000 a year would bring enormous results. That sum means only about \$20 for every county represented in the organization.

In the sixteen States which these promotive utterances might induce the ignorant to believe are "represented" in the organization the last census counted less than half 2500 counties which this latest erroneous stuff, in line with most of the matter printed in efforts to raise money for the "Congress," would picture as "represented" in the organization. Therefore the business man approached for money upon such miscalculations will be inclined to ask, as a simple gauge of business acumen, for an itemized account of the receipts to date of moneys for the "Congress," the origin of the contributions and the definite facts to prove that acknowledged expenses of \$25,000 in 20 months have produced \$2,500,000 worth of work for the South. One item is mentioned by the New York *Commercial* as follows:

A recent letter from Colonel Roosevelt to one of its officers commending its work and forecasting its achievements was promptly turned over to the Associated Press, and within a few hours it was printed by thousands of newspapers from the Rio Grande to Hudson Bay. It cost the congress less than \$100—traveling expenses of a representative—to secure the letter, but the value of the advertising in it can hardly be computed.

But the value of the letter as an advertisement of the value of the "Southern Commercial," whatever value it might have as an inducement for the uninformed to spend their money upon the "Congress," was demonstrated in the fact that the most expert and adroit advertising agent in the country, Colonel

Roosevelt, sized up the utter insignificance of the "Congress" in promising in the letter that was printed "from the Rio Grande to Hudson Bay" that if the "Congress" would meet in some city through which he would pass in his spring campaign he would be glad to make a speech to it. As a matter of fact, the "less than \$100—traveling expenses of a representative" spent by the "Congress" for advertising the South among the inhabitants of the arctic regions was actually spent principally in advertising Colonel Roosevelt, who can get all the advertising he wants without the expenditure of "less than \$100—traveling expenses of a representative." The letter, though, excited in the mind of intelligence a wonder what element in the South can possibly imagine that that thriving section of the country can be benefited by the news, printed "from the Rio Grande to Hudson Bay," that Colonel Roosevelt will make a speech to a "Congress" provided it meets in a city through which he will pass at some future date.

FOR NEW ORLEANS IN 1915.

Referring to the publication in our issue of October 27 of nearly 11 pages of letters from manufacturers, bankers, engineers and other men of affairs in 27 States dealing with the subject of the location at New Orleans of the World's Fair in 1915 to celebrate the completion of the Panama Canal, Mr. James L. Wright, acting secretary of the World's Panama Exposition Co. of New Orleans, writes:

We wish to extend to you our sincere thanks and appreciation for your very kind favor of the 26th instant and the splendid assistance which you have rendered to our efforts to secure Congressional recognition and win this Panama Exposition for New Orleans and the South.

This last effort which you have made in securing expressions from 27 different States and from such diversified interests will undoubtedly have a very great effect in behalf of our city, and we are anticipating with much interest the issuance of your number which will contain the same.

We have taken the liberty of furnishing a copy of your letter to our New Orleans papers for publication tomorrow as the leading story in our Daily Exposition News columns, so that our people may know what splendid assistance your publication is giving us.

In republishing from our columns the summary of the 200 letters, the New Orleans *Picayune* said:

Elsewhere in this issue the *Picayune* publishes an article from the Baltimore *MANUFACTURERS RECORD* summarizing the contents of 11 pages of letters it has received from manufacturers, bankers, engineers and other business men in more than 100 cities in 27 States of the Union endorsing New Orleans as the "logical point" for holding a great exposition in 1915 in celebration of the opening of the Panama Canal. The *MANUFACTURERS RECORD* is one of the most enterprising and newsy of the technical publications of the country, and has done yeoman service in developing the industries of the South. In securing and publishing these endorsements the *MANUFACTURERS RECORD* has done the cause of the Panama Exposition and New Orleans as the logical point for holding the same a great service, which our people will undoubtedly appreciate.

The summary of the letters to the *MANUFACTURERS RECORD* shows that New Orleans is indorsed as the "logical point" because this city is destined to be the great outlet and entrepot for business between this country and Latin America and the Orient, as it is the nearest, most convenient and natural geographical gateway for the traffic. The letters are from correspondents all over the North, East, Middle West and South, and constitute one of the most valuable contributions yet received to the work of securing the indorsement of the National Legislature of this city as the proper location for a Panama exposition.

On another page of this issue we publish quite a number of similar letters that were received too late for use in

our issue of last week. They carry on the argument for New Orleans emphasized in the earlier letters, and we hope that the widespread reading of all the letters, indicating so strongly, as they do, the interest in a great part of the country in the exposition plan, may have the practical effect of making successful the plan of New Orleans to attract the world to its limits in celebration of a world event in 1915.

SOUTHERN INDUSTRIAL DEVELOPMENT.

Since January 1, 1910, there have been published in the Construction Department of the MANUFACTURERS RECORD 42,454 items relative to industrial and railroad developments, building operations, etc., in the South and Southwest. The work of the preceding nine months has been detailed in previous statements. The summary for October follows:

Synopsis of Construction Department, MANUFACTURERS RECORD, covering the months of January, February, March, April, May, June, July, August, September and October, 1910.

Total of items to November 1.....42,454
Construction.....35,384
Machinery, Proposals and Supplies Wanted.....5,820
Burned, etc.....1,390

Items up to October 1 previously detailed.
October items divided in detail as follows:

Bridges, Culverts, Viaducts.....	70
Canning and Packing Plants.....	15
Clayworking Plants.....	26
Coal Mines and Coke Ovens.....	41
Concrete and Cement Plants.....	3
Cotton Compresses and Gins.....	21
Cottonseed-oil Mills.....	15
Drainage and Irrigation.....	18
Electric-light and Power.....	96
Fertilizer Factories.....	25
Flour, Feed and Meal Mills.....	33
Foundry and Machine Plants.....	37
Gas and Oil Developments.....	49
Ice and Cold-storage Plants.....	57
Iron and Steel Plants.....	5
Land Developments.....	85
Lumber Manufacturing.....	67
Metal-working Plants.....	8
Mining.....	59
Miscellaneous Construction.....	57
Miscellaneous Enterprises.....	151
Miscellaneous Factories.....	239
Railway Shops, Terminals, Round-houses, Sheds, etc.....	11
Road and Street Work.....	147
Sewer Construction.....	69
Telephone Systems.....	29
Textile Mills.....	44
Water-works.....	103
Woodworking Plants.....	47
Railroads.	
Steam.....	225
Street.....	24
Buildings.	
Apartment-houses.....	42
Association and Fraternal.....	153
Bank and Offices.....	115
Churches.....	79
City and County.....	39
Courthouses.....	11
Dwellings.....	302
Government and State.....	19
Hotels.....	69
Miscellaneous.....	59
Railway Stations.....	24
Schools.....	102
Stores.....	139
Theaters.....	23
Warehouses.....	53
Burned, etc.....	148
Machinery, Proposals and Supplies Wanted.....	433
	3,491

The Machinery, Proposals and Supplies Wanted list contains 13 foreign wants from interested parties in Brazil, Peru, France, Russia, China, Turkey, Egypt and Africa.

CLEAN UP—PAINT UP—AN OPPORTUNITY.

With crops aggregating in value probably \$2,750,000,000, against \$1,271,000,000 in 1900, the South is now in a position to do great work in carrying forward enterprises which could not be taken up until this section had gotten in good shape financially. In town and city building operations there is an unlimited field for improvement work. It is incumbent upon towns and cities of the South to put their house in order; to build good streets, to beautify them in every way possible through cleanliness of streets and alleys, the planting of shade trees, and the encouragement of the free and liberal use of paint. Wherever water-works and a sewerage system are lacking, in whole or in part, they should be established under the best engineering advice, in order to

provide the purest water and the most thoroughly sanitary sewerage-disposal conditions. Viewed from no higher standpoint than that of purely material profits through enhancement of real estate values, the enlargement of trade and manufactures and the attraction of new capital and new people, investments of this kind are among the very best that can be made. Money thus expended is not being used for luxuries, but for the necessities of modern life, though these necessities may become luxuries by adding to the comfort and the health of the people, and thus adding mightily to the prosperity of their community. A general cleaning up of Southern towns and cities and a general painting of unpainted houses would be worth many millions of dollars to this section. All men are more or less imitators. The dirty, dingy, unattractive house tends to make the owners of other houses less careful about the looks of their places, while the well-painted house and the well-kept yard are a constant object-lesson to stimulate others to follow such a good example. In times past, when suffering from the poverty of the war, the South could not do many of the things it is now able to do. Though paint is an investment which, properly used, adds not alone to the beauty of the house, but protects it from decay, it was an investment that could not be made by people who had to struggle along for the bare necessities of life. It was an outlay they could not make because they were striving to get bread and clothes. These days have passed for a large majority of the people. Millions are thriving and there is work for every man. Under these changed conditions there ought to be a complete revolution in the painting of houses of the poorer classes as well as of the more expensive homes; the cleaning up of yards, front and back; the cleaning up of streets and unimproved lots, and in doing all the things that make for the beautifying of town and city, recognizing that these things minister to the higher side of life as well as to the material side. Let the South, with its increasing wealth, with the bountiful crops which this year Nature has given to it, turn its attention to good roads and good streets, to the painted house, and, in country places, the whitewashed fence and out-buildings—to everything, in fact, that makes for the betterments of health, the comfort of its people and the pleasure of those living in the section, as well as of the visitors that are coming South in ever-increasing numbers, and then, indeed, will it be a land of beauty and of unending delight.

THE COTTON MOVEMENT.

According to the report of Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, the amount of cotton brought into sight during 58 days of the present season was 3,357,118 bales, a decrease under the same period last year of 318,244 bales. The exports were 1,718,368 bales, a decrease of 85,943 bales. The takings were, by Northern spinners, 404,034 bales, an increase of 71,976 bales; by Southern spinners, 375,885 bales, a decrease of 43,175 bales.

The proceedings of the twenty-second annual convention of the Mississippi Bankers' Association, Messrs. B. W. Griffith of Vicksburg, president, and R. Griffith of Vicksburg, secretary and treasurer, have been published in attractive pamphlet form.

INFLUENCES IN AMERICAN CITY GROWTH.

[Written for the Manufacturers Record.]

In the past decade 204 cities, each now having a population greater than 25,000, increased their aggregate population from 19,515,000 to 25,822,000, or by more than 6,307,000, equal to 32.3 per cent. About 100 of these cities had a rate of increase greater than the average rate. The secret of this urban growth is not hard to discover. It stands forth clearly in letters which the MANUFACTURERS RECORD has received from the mayors of nearly 50 of the cities, ranging in population from the leader, and one of the oldest, New York, with its 4,766,883 inhabitants, an increase of 38.7 per cent. in 10 years, to one of the youngest, Oklahoma City, with 64,205, an increase of 539.7 per cent. The cities whose authorities have kindly met our request for a brief explanation, from their standpoint, of the growth of their respective communities, lie in 24 States, Alabama, California, Connecticut, Colorado, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Massachusetts, Michigan, Mississippi, Missouri, New Jersey, New York, Ohio, Oklahoma, Pennsylvania, Rhode Island, Tennessee, Texas and Virginia, containing some of the larger as well as some of the smaller of the cities under consideration, and widely enough scattered and sufficiently influenced by varying conditions in American life to give a fair reflection of urban growth, which now constitutes probably 36 per cent. of the total population of the country.

Two-thirds of the replies point straight to what is the dominating element in this growth, the establishment of manufacturing industries or the expansion of those which have been in operation for a number of years. In a number of instances a special industry is given the main credit. Akron, O., the center of the cereal food trade of the country, estimates that 70 per cent. of automobile tires made in the United States come from its factories, while Detroit, Mich., counts 40 or 50 per cent. of all the automobiles made in the country among its products. New Bedford, Mass., a fine example of the ability of the New Englander to turn defeat into victory, has its textile industry, dating back to the decline of whaling in the North Atlantic. Pipe and tube plants and shipbuilding, added to the advantages of a magnificent harbor, have made Lorain, O., what it is, and other particular industries mentioned are woolen goods at Passaic, N. J.; four silk-weaving establishments at West Hoboken, N. J.; machine shops and bridge works at Roanoke, Va.; the headquarters of a great railway system, the placing of extensive railway shops at Macon, Ga.; zinc-smelting plant and ear factory at Danville, Ill.; electric machinery at Pittsfield, Mass.; the navy-yard at Portsmouth, Va.; a rolling mill at Middletown, O.; cigars at Tampa, Fla., and diversified industries at Amsterdam, N. Y., including carpet and rug mills, knitting factories, brush and broom, pearl buttons and silk gloves, financed with few exceptions by local capital and reflected in the prosperity at New Britain, Conn., of workers representing nearly 25 nationalities, including Irish, German, Swede, Italian, Pole, Greek, Armenian, Persian, Lithuanian, Ruthenian and Hungarian. Contiguity to coal fields, as at Terre Haute, Ind., and to the soft-coal region of Illinois, as at East St. Louis, are contributory to industrial life, and the nearness of Chattanooga, Tenn., to great coal and iron deposits enables that city to turn out 616 different manufactured articles, with the promise of greater development with the completion of two hydro-electric plants with an aggregate of 100,000 horse-power. Tulsa, Okla., is not in the 25,000 class, but it is mentioned in this connection because of its notable increase in population of more than 1200 per cent., due principally to its location at the center of the great mid-Continent field of oil and natural gas. Another city, likewise not in the 25,000 class, is Jackson, Miss., with a marked increase directly traceable to the impetus given by the completion in July, 1900, of a railroad connection between the Mississippi capital and the flourishing Gulfport, through the long-leaf pine region and fertile fields of the State.

Steam railroad facilities and interurban electric lines have contributed to city growth in Indiana and Illinois, especially, stockyards and meat-packing have given East St. Louis, Fort Worth and Oklahoma City tremendous impulse; improvement of harbors at Jacksonville, Fla., and Mobile, Ala., are other influences that have been cited, Des Moines, Iowa; Austin, Tex.; Lexington, Ky., and other cities are educational centers, while Everett, Mass., within three miles of the Statehouse at Boston; Fort Wayne, Ind.; Brookline, Mass.; Pasadena, Cal.; Detroit, Mich.; Middletown, O.; Jackson, Miss., and Lansing, Mich., are examples of the effects of assiduity on the part of municipal officials in furnishing sanitary surroundings and encouraging the best public utilities.

Between 1890 and 1900 the growth of Wichita, Kans., in population was only 3.6 per cent. In the past 10 years the rate of increase was 112.6 per cent. That city has become the center for a great trade that has developed to the south and to the west of it, and it is the home of 1100 traveling men.

The growth of many of these cities within their limits has been accompanied by an increase in suburban population. In a number of cases the rate of increase is partly due to a taking in of outlying territories, Battle Creek, Mich.; Macon, Ga.; Portsmouth, Va.; Springfield, Mo.; Bay City, Mich., and Nashville, Tenn., being examples of this process. Again, to the activities of commercial bodies is attributed the attraction of homeseekers and investors in manufacturing, trade and commerce to cities and the travels of tourists in the South and West particularly have brought about permanent settlement in different localities.

It is one of the marvels of American life, this growth of cities. Fifty years ago, with manufacturing just about taking the premiership in national productive activities, there were but 141 cities in this country having each a population of 8000 or more. The number of such communities had reached 545 by 1900. In that year there were 161 cities having each 25,000 inhabitants or more. Now they number more than 200. In the transformation of the past half-century commerce has played its important part, the quadrupling of railroad facilities has been most efficient, the rise of educational centers has been a factor to be considered. But upon all of the various other agencies manufacturing has had a tremendous influence, and in the interplay of forces has been the great one in the tendency of urban growth to surpass the rate of increase of population in the rural regions. Some cities have depended upon a single factor, some upon two or three, and some, like New York, have felt the effects of the growth of the country behind them. New York, as Mayor Gaynor says in his letter, is a great seaboard city, and the metropolis of the country. It is growing from a variety of causes, just as London and Paris and Berlin are growing.

A splendid survey of the country's city growth is offered in the letter which the mayors have sent to the MANUFACTURERS RECORD. Not every great and growing city

is represented in the following five pages. Within the limitations it was not possible to include many flourishing communities of less than 25,000 inhabitants, whose stories of progress are of deep interest for the student of material affairs. But in the group that has been covered through responses of municipal authorities to the request of the MANUFACTURERS RECORD for a brief summary of the situation are a sufficient number of typical cities to indicate the character of the growth of all. The letters follow:

AKRON, O.

Mayor Wm. T. Sawyer.

The increase of 61.6 per cent. in the population of this city between 1900 and 1910 is due almost wholly to the extension of our factories.

Akron is one of the largest cereal centers in the world.

The larger part of our growth came from the wonderful extension of the rubber industry. I understand that we manufacture 70 per cent. of the automobile tires made in this country. In addition to that, we make everything that can be produced from hard and soft rubber.

Our corporate limits have not been extended during the past 11 years. Akron extends to and is practically built up to Cuyahoga Falls, a village to the north of about 4000 population, the same in the southern part of the city, which extends to and is practically built up to Barberton, with a population of 10,000 or 12,000.

In 1920, with these villages taken in, our population will be in the neighborhood of 200,000.

We are trying to make Akron the best-governed city in this country.

AUSTIN, TEX.

Mayor A. P. Wooldridge.

The most important causes, so far as I believe, contributing to the increase of our population during the last decade, are the following:

(1.) Our town, as an educational, social and political center, has attracted a good many people to this city. This is the capital of the State and the seat of the State University, and in sympathy with the general growth of the State in population, a good many people have come here, as they have gone to the other larger cities of the State, influenced by a variety of considerations, the chief of which, however, are the educational, political and social advantages of this city, as stated above.

(2.) The advantages of this city have been a good deal advertised by our Business League and our newspapers. This advertisement has made our merits known, and as known people have been attracted here.

(3.) We believe the efficiency of the commission form of government, which is now in operation here, has attracted a good many quiet people who want an honest, non-partisan and efficient public government. This class of people, I think, in a measure have been attracted by our present form of government.

AMSTERDAM, N. Y.

City Clerk Thos. J. Hazlett.

Mayor Conover has turned over to me for answer your letter of inquiry as to the reasons for the rapid growth of Amsterdam during the last decade.

Amsterdam has never been a boom town. Her growth has been natural and healthy from infancy. Her increase in population during the last 10 years, as in previous years, has been due entirely to her large and constantly-increasing manufacturing plants, the most important of which are the carpet and rug mills of S. Sanford & Sons; the rug mills of the McCleary, Wallin & Crouse Company; the Shuttleworth Bros. Carpet Co., and the 30 or more big knitting factories, together with the numerous minor factories and shops that such industries above enumerated call into being and to which they afford profitable business. Besides these, Amsterdam is fortunate in having a number of widely

varied manufacturing plants, and is thus enabled to call to and retain within her borders help of all sexes in large numbers. Of late years Amsterdam's silk glove factories have grown to important proportions. The pearl button factories of Amsterdam are the largest in the world, and her brush and broom factories are the most important in the United States.

Financially, Amsterdam stands at the head of all cities of her class. During the depression of 1907 she was the best business city in the Empire State, so pronounced by commercial travelers, who have excellent opportunities for forming correct judgment in such matters. Coupled with Amsterdam's varied industries is the important fact that her moneyed institutions and her manufacturers are financially sound, enabling them to continue doing business under trying conditions, thus holding her operative class as a permanent asset. Another reason for Amsterdam's rapid and continued growth is that with few exceptions her industries are financed by her own capitalists.

These important and inseparable conditions and a low tax rate are the controlling influences responsible for Amsterdam's phenomenal growth during the last decade.

BAY CITY, MICH.

Mayor Gustaves Hine.

The increased population in Bay City did not come altogether in a natural way. Some of the gain was made by consolidation with all of the territory formerly known as West Bay City or Wenonah, lying west of the Saginaw River. These cities were consolidated in 1904, and the population of West Bay City at that time was from 10,000 to 12,000 inhabitants. All the rest of the increase was gained by natural growth of our city.

BATTLE CREEK, MICH.

Mayor John W. Bailey.

In 1880 the limits of our city were extended one-half mile west and one-half mile east.

In 1897 our limits were extended to take in a 16-acre park which had been donated to the city. Excepting the addition of the park, our city limits are now the same as they were in 1880.

In 1880 our population was 13,197.

In 1900 our population was 18,563.

In 1910 our population is 26,567.

Our city growth has been regular, and is entirely due to the increase of a number of our manufacturing plants and to the increase in size of the old plants. The territory outside of Battle Creek's limits and adjacent thereto has in several directions developed very rapidly, and we could, by increasing our city's limits, as other cities have done, have added several thousands to our population.

About 1880 a short branch steam road was built, running south from Battle Creek through Joppa, East Le Roy, Athens, Leonidas and other towns. This road is now owned and operated by the Michigan Central, and brings into Battle Creek some increased trade not previously coming here.

In 1902 an electric interurban was built, running east from Battle Creek through Ceresco, Wheatfield, Marshall and other small towns. This has brought some increased trade to Battle Creek.

About two years ago the Grand Trunk Western Railway Co. located its principal locomotive works for the United States at Battle Creek. This has added some 600 mechanics.

Briefly, I should say that our city was never in better shape than at present. Everyone has plenty of work at good wages. Our railroad facilities are of the best, which causes new manufacturing plants to come here from time to time, and all seem to be fairly successful and growing. This adds steadily to our population.

BROOKLINE, MASS.

Edward A. McEttrick, Secretary of Selectmen.

The growth of the town of Brookline is due entirely to its being an attractive residential suburb of the city of Boston. There is but one manufactory in Brookline, which employs about 400.

CHATTANOOGA, TENN.

Mayor T. C. Thompson.

The population of the city of Chattanooga, as shown by the Federal census, is 44,604. This shows an increase of practically 48 per cent. in 10 years without the addition of any outlying territory except a small strip. The suburban population is probably 30,000, and if counted in the Chattanooga population will run the figure up to at least 75,000.

The remarkable growth of the city of Chattanooga is attributed to the facts: First—Our nearness to coal and iron, which enables this city to turn out 616 different manufactured articles, approximating in value \$25,000,000.

Second—Two water-power plants now nearing completion, involving an expenditure of something like \$5,000,000 on each, which will furnish this city with cheap power amounting to over 100,000 horsepower.

Third—The magnificent climate, scenic beauty and historical surroundings have undoubted effect in attracting outside population.

Fourth—Chattanooga will naturally be one of the great gateways of this section when the Panama Canal is completed.

DANVILLE, ILL.

Mayor Louis Platt.

After a thorough consideration, the causes for the 70.4 per cent. increase in population in this city during the last 10 years were, I think, annexation of outlying territory, diversified industries and additional railroad facilities.

Of the 70 per cent. increase, about 18 per cent. was due to annexation of three suburbs, 13 per cent. to two new railroads which entered this territory and 40 per cent. to the manufactories.

When the census was taken 10 years ago Danville had no factories of any importance. Since then a number of industries have located here, principal among which are a railroad shop, a zinc-smelting plant and a car-manufacturing company. We might add also that there has been an increase in the production of coal from the local mines.

DECATUR, ILL.

Mayor Chas. M. Borchers.

The growth of the city of Decatur, Ill., has been steady and substantial during the last 10 years, caused by the loyalty, character and disposition of the people. The establishment of the James Millikin University has been a great factor, bringing many of the class of people that desire to give their children the benefits of an education, and to accommodate them it has brought much labor.

The increase in the railroad and manufacturing interests has also had much to do with the growth of the city, notably the permanent location of the Wabash Railroad shops and the increase of the H. Mueller Manufacturing Co.

And then the establishment of the Illinois Central Traction Co. (interurban) lines through Decatur and making Decatur

the central point for lines extending to St. Louis and Springfield on the west, Peoria and Bloomington on the north and Champaign and Danville on the east has been a great benefit to the city of Decatur.

DENVER, COL.

Mayor Robert W. Speer.

The population of Denver in 1900 was 133,859, and in 1910, 231,381, an increase of about 60 per cent. in actual growth—not annexation.

Denver is enjoying an era of prosperity, without any of the boom features. Her building permits average \$1,000,000 per month. In my opinion, her growth is largely due to the fact that her advantages and possibilities are becoming known. Denver's call is being heard:

As a health city, with pure air, bright sunshine, clean streets and a healing climate.

As a home city, with excellent schools, uplifting churches, healthy amusements; homes, lawns and gardens for both rich and poor, which reflect the happiness of the people.

As a tourist city. This ever-increasing number, who travel for pleasure, education or a change, have found in Denver a city surrounded by the scenery of Switzerland, the productive valleys of the Nile and the richest mineral vaults of the world.

As a commercial city, without a rival in a territory of 600 miles from east to west and 700 miles from north to south, and while much of this vast area is barren, or covered with mountains, it is rapidly being developed and each year sends to Denver increased streams of wealth. With the storage of surplus water and the harnessing of unlimited electric power, its development will be more rapid in the future than ever in the past.

As a manufacturing city, 1250 manufacturing plants are located in the city, and while a majority of them are small, they all show a healthy growth and will continue to enlarge as the population of the surrounding country increases.

DES MOINES, IOWA.

Mayor James R. Hanna.

Our growth is in no wise attributable to annexation of outlying territory. It is in some considerable measure due to trade expansion and to manufacturing. There is another thing that is contributing a great deal to the growth of our city, and that is, the general impulse toward a forward movement coming out of our better city government.

Some five years ago the business interests of the town organized to further the general progress of the town, setting a standard of growth to be attained in a given number of years. The first thing they decided as being necessary for this growth was a betterment of our city government so as to make the place more attractive both for homes and for new industries and enterprises. They also started a campaign of advertising setting forth the advantages of our city for the industries of various kinds. While this has not resulted in any steady expansion, it has stimulated the growth very materially by inducing a location of branch houses of large business institutions, a great variety of manufacturing and the extension of our wholesale trade into contiguous territory.

We have inaugurated a definite campaign for getting better railway connections, better time schedules, etc., so as to increase our shipping business.

For a city of our size, I presume institutions of a financial or semi-financial nature are more numerous here than in most cities. We have more postal receipts, for example, than most cities of 50 or 75 per cent. larger population, owing to the vast

number of insurance and kindred companies.

In addition to this, Des Moines is the home of four institutions doing regular college work, besides commercial schools and special educational institutions. All these, of course, attract people to come here with their families. Des Moines is, therefore, known by those who visit us as a city of homes.

You will see from this statement that it is a combination of influences that contribute to our rather large growth, and that if there is any one thing that has done more than anything else to bring this about it is the new civic impulse.

DETROIT, MICH.

Mayor Philip Breitmeyer.

There can be no question that the greater part of Detroit's growth is attributable directly to the automobile industry.

At the time of the taking of the Federal census for 1900 the business, of course, was not large enough to be a factor in any city. Its immense growth is known to the whole world, and most of the world also knows that Detroit contains the manufacturing of something like 40 or 50 per cent. of all the automobiles made in the United States. The location of these factories has brought to the city a great many thousands of workingmen who would not otherwise have located in Detroit.

If we are to look farther and endeavor to find the reason for the location of such a great proportion of the automobile manufacturers in Detroit, I think the answer will be seen in the fact that Detroit is a city of wide, level, clean and well-paved streets, of admirable educational facilities and almost perfect labor conditions.

EAST ST. LOUIS, ILL.

Mayor Silas Cook.

Our city has a very favorable geographical location. It is located on the eastern banks of the Mississippi River, and is the terminus of 22 or more trunk-line railroads and is surrounded with two belt lines connecting with all the roads running north, south, east and west. We are located in the heart of the soft-coal region of the State of Illinois. We have an unlimited supply of water, which is taken from the Mississippi River and filtered before being sent throughout the city; also have as good an electric railway system as any city in the country, and have interurban electric railway connection throughout the State of Illinois; also have a diversity of manufacturing plants. We have some very large iron and steel plants, frog and switch works, spring works, glass works, paint works, baking-powder plants and numerous other factories and industries. We also have the St. Louis National Stockyards, which is the third largest market in the United States. We also have the largest horse and mule market in the world. Recently there has been located in our city a large zinc works. We also have the largest aluminum-reducing plants in the United States.

The growth of the city has been caused by the great industries and the need of skilled and unskilled labor of all kinds to operate those industries, and the great advantages which the city has by means of the steam and electric railways entering her doors. It is true that our city has expanded and taken in some outlying territory, and during the last 10 years the business and trade of the city has extended more in proportion to the growth of the city than it has in population. Another reason for our great growth is because homes and factory sites can be bought at reasonable cost, and the city for the last 10 years has had an administration which has been backed up by the business interests of the city, and they work in

harmony for the growth and upbuilding of our city.

EVERETT, MASS.

Mayor Charles Bruce.

There are several reasons for our rapid growth. Situated but three miles from the Statehouse, Boston, with unexcelled railway accommodations, with splendid schools, and being a no-license city, it has appealed to the man of moderate means as a good place in which to live and rear a family, and as a result it has grown rapidly in population because it is justly entitled to the title "a city of homes."

But while houses were being built and occupied the value of our city as a shipping or receiving point has been recognized, and many large manufacturing industries have located here, taking advantage of the Boston & Maine Railroad, the Boston & Albany Railroad and the splendid water front on both the Mystic and Malden rivers. These industries have been encouraged by a live Board of Trade and the evident intention of the officials of the municipality to treat manufacturers fairly.

Thus the principal reasons for our rapid growth are a good healthy city and the growth development and expansion of manufacturing industries.

FORT WAYNE, IND.

Mayor Jesse Grice.

As to the reason for the splendid increase the city of Fort Wayne has made in its population since 1900, I beg to state that, in my opinion, the city owes its remarkable growth to the fact that this is a "home-owning city," by reason of which manufacturing concerns locate here because labor is contented; only one strike in 25 years, which was settled amicably. Another inducement is transportation facilities, eight railroads, five of which are trunk lines. The health condition of the town is good; bank deposits second largest in the State; men are well paid; there is little foreign labor, and all save money.

FORT WORTH, TEX.

Mayor William D. Davis.

Fort Worth is logically the industrial center of Texas, and its railroad facilities are such as are bound to attract attention. But Fort Worth today would be just what it was 10 years ago had it not been for those men who, imbued with faith, sunk half or the whole of their fortunes in getting a wave of progress started breaking over this city. True they recovered the original investment represented, but had they not possessed the daring for launching the big venture for which they are directly responsible Fort Worth would be languishing in her own inertia now. She wouldn't be the big city the census shows her to be. It is the people who had the interests of this city at heart who made Fort Worth, bringing through their influence and the expenditure of their money the laborers to work at the industries located here. Keeping Fort Worth an industrial center will see Fort Worth put on greater strides in the coming 10 years.

HAMILTON, O.

Mayor A. Rothwell.

Hamilton in 1900 had a population of 23,914, and this year the census shows our population to be 35,279, an increase of 47½ per cent. in the past 10 years.

We attribute our growth to the increased manufacturing interests which have located in our city and compelled us to annex two small suburbs. The average growth for the city of Hamilton since 1880 has been about the same. We had approximately 12,000 people in 1880, 17,000 in 1890, 24,000 in 1900 and 35,000 in 1910. Our steady growth has not been marked by booms of any sort, but we have at-

tracted a number of large manufacturing industries from Cincinnati some years ago. These have steadily increased in size, and as they have been rather diversified in the nature of their products they have attracted a steady stream of new citizens.

Our chief industries are those concerned in the manufacture of various kinds of machinery, stoves, safes and paper. Most of our labor is skilled labor. We have gained some during the last 10 years by the annexation of two industrial suburbs situated in close proximity to the city. None of our growth is attributed to any organized effort on the part of our citizens, but this feature has been recently introduced by the organization of the Chamber of Commerce or Board of Trade, which is seeking to add new industries.

JACKSON, MISS.

Mayor A. C. Crowder.

Jackson's phenomenal growth and prosperity dates from 1900. In that year Mississippi's Capital City was a little more than a straggling village of 7000 inhabitants. Today it is the metropolis of Mississippi—the leader in all movements looking to the advancement in commercial, educational and industrial life.

Its civic pride, given impetus through its various organizations along public lines, is most marked.

As a railroad center, I know of no town its size its equal.

Jackson's increase in population, now numbering more than 21,000 happy and prosperous citizens, can be attributable to the awakening of its public-spirited citizens and to its growing importance as a manufacturing center, especially in wood-working enterprises.

This city is fast becoming headquarters for lumber manufacturers and brokers.

New railroads are being built and projected.

As an educational center Jackson has no equal in Mississippi.

With your permission I will present a few municipal facts with which I am familiar.

Jackson is the first city in the United States to have its population published by the census department. It is the only city in Mississippi that has yet had its 1910 census published by the census department.

Government census showed 7800 people 10 years ago, and now shows 21,262 within the corporate limits, and does not include several thousand suburbanites and several hundred college students.

Jackson has more than 100 miles of streets.

Jackson has more modern paved streets than any city in Mississippi. In addition to three miles of modern paved streets heretofore laid, three miles now under contract are being laid, and with a further addition of more than a mile of paving to be let by contract.

Jackson has 40 miles of concrete sidewalks and curbs, 45 miles of water mains, 30 miles of sanitary sewers and about 8 miles of storm sewers.

A water-works plant with a pumping capacity of 10,000,000 gallons per day, in addition to which is the new water-works system of artesian wells now in process of construction, affording the city by January 1 a flow of 4,000,000 gallons each day of pure artesian water.

Jackson has 475 fire hydrants, being considerably more than the combined number of Vicksburg and Meridian. With a new water-works system completed in January, 25 standard fire pressure streams from 25 fire hydrants simultaneously are guaranteed.

In the past 10 years Jackson has expended in these municipal improvements alone \$1,700,000.

The assessed valuation of individual

property-holders is nearly \$12,000,000.

Jackson was Mississippi's capital 70 years before it began its present phenomenal growth and development—conclusive evidence that its enterprising and wide-awake citizenship of today has not been idle.

This and much more could be said of the advantages of Jackson.

JOHNSTOWN, PA.

Mayor Alex. Wilson.

The increased population in this city is due to the growth of manufacturing industries.

LANSING, MICH.

City Clerk Peter F. Gray.

Relative to the cause of the unusual increase in the population of this city, I will say that the principal cause is the automobile industry, and also the efforts of the Lansing Business Men's Association and the fact of its being the capital city.

LEXINGTON, KY.

Mayor John Skatin.

Four years ago the limits of the city were extended in order to take in some outlying neighborhoods that had been built up within the past few years. This property was all residential, and we did not gain more than 3000 by the extension. The growth of Lexington has been slow, but sure. We have no factories of any importance, being an inland city. Our strongest card is our educational facilities. We have the University of Kentucky, Transylvania University (over 100 years in operation), Hamilton Female College, Campbell-Hagerman Female College, St. Catherine's Academy and an excellent public school system. Families are continually moving into the city from Central and Eastern Kentucky, in order that their children may attend the schools and colleges here.

Lexington is a busy and thriving city, and while we do not intend to criticize the work of the census enumerators too strongly, we feel that Lexington is much nearer a city of 40,000 inhabitants than she is of 35,000. The registration of voters here, taken on the 5th inst., shows 6085, and this being an off year, there was a very heavy falling off in the registration from last year.

Trade conditions here are improving steadily, owing largely to the building of an interurban traction system. We now have traction connections to Versailles, Frankfort, Georgetown, Paris and Nicholasville, with cars running every hour. This puts Lexington in close touch with these cities, which are all county seats of wealthy communities.

LORAIN, O.

Mayor F. J. King.

Certainly the growth of Lorain is a matter for the people of Lorain to congratulate themselves upon.

In 1890 the population of Lorain was less than 3000. In 1900 it had increased to 16,000, a gain of 500 per cent. From 1900 to 1910 it gained from 16,000 to nearly 29,000, and the rate of increase exceeded 80 per cent. I think I am safe in saying the city's growth is nearly entirely due to the growth of manufacturing. From 1900 to 1910 we annexed no outlying territory whatever, and the 80 per cent. of growth was entirely within what were the corporate limits in 1900.

Our first and greatest asset is our magnificent harbor, the channel of the river being navigable from the entrance of the piers for nearly four miles for vessels of the heaviest draught carrying the large cargoes that traverse the lakes. This natural advantage led to the establishment and building of the plant for the manufacture of steel and steel products. This

plant was largely the cause of the growth from 1894 to 1900.

Since 1900 the steel plant has become one of the constituent parts of the National Tube Co., and has doubled its capacity by the erection of mills for the manufacture of pipes and tubes, and in doubling its capacity has doubled the number of its employees.

The American Shipbuilding Co. located here about 1898, and has since 1900 doubled the capacity of its yards. Since then several smaller industries have been located here.

I feel that while we can hardly expect the city's growth to continue to show as large a per cent. of increase as that of the last decade, yet the splendid natural advantages necessarily insure a continued rapid growth.

MACON, GA.

Mayor John T. Moore.

The wonderful growth of the city of Macon between 1900 and 1910 was due as much to the manufacturing element appreciating a geographical position as it was, to annexation of outlying territory and other causes.

The city of Macon is located within six miles of the exact center of the State, with 11 railroads running in as many different directions. Practically it has three States to draw from, having trunk lines to even more. With the coal fields of Tennessee, the iron mines of Alabama and the hardwoods of Southern Georgia at command, to say nothing to being the buckle on the cotton belt, and within a few miles of the peach belt, it can be seen that Macon enjoys an enviable position. It was probably because of this admirable situation that the Central of Georgia Railway system has spent upward of \$2,000,000 in the erection of the second largest and best-equipped railway shops in the country.

Annexation probably brought us in 10,000 souls. The others were brought in by trade expansion and the attractions already enumerated to manufacturers.

Like many other cities, I am of the opinion that Macon has suffered from an incorrect count of its population. I fully believe that if we could have foreseen the incorrect and lax method of enumeration, that only developed during and after the compilation of the census, our percentage of increase of population would have amounted to 80 per cent., if not 90 per cent., instead of 74.7. The population, as taken by our sanitary inspectors, the city being divided into wards, shows in round figures 25,000 whites and 20,000 blacks, but this cannot possibly be accurate, for the reason that many escaped the count made by the inspectors. However, the figures as given by the United States Census Bureau must be accepted, and while they are not only a disappointment, but, in our opinion, incorrect. Our citizens are now imbued with a determination to increase our population for 1920 sufficient to make it the second city in Georgia.

MIDDLETOWN, O.

Mayor L. C. Heffner.

Our city received its impetus to growth about six years ago by the location here of a new industry, the American Rolling Mill Co., brought by inducements of free land and stock subscriptions by some local capital. Its growth has been rapid and its success great, and this mill is now erecting a three to four-million-dollar plant here, which will further very materially increase our population and prosperity.

Aside from this, the action of the American Tobacco Co. in centering its tobacco business here has been a factor in our recent development. The addition of these large industries has had its effect in stimulating to greater things those already here, and expansion has been the rule.

Our people are all boosters, and realize that their prosperity is assured by the growth and prosperity of our industries, and along with this comes the desire for libraries, hospitals, parks and Y. M. C. A.'s and all things looking to a rounder and fuller physical, mental and moral development.

A clean, public-spirited municipal government adds its weight to other desirable things, and all together tend to a satisfactory and solid growth.

MOBILE, ALA.

Mayor Pat J. Lyons.

The growth of the city of Mobile during the last 10 years may be attributed to a general progressive movement along all lines in this territory, with which our city has merely kept pace, and also to the growth of our export and import business with Central America, Cuba and Europe.

The limits of the city are exactly what they were in 1875, so you can see we have not gained anything on the score of extension of limits.

The territory adjacent to Mobile is being built up; waste lands cultivated; some manufacturing have sprung up, and our wholesale and jobbing trade is increasing, some of the largest wholesale establishments in the South, especially dry goods, hardware and groceries, being located in Mobile.

The deepening of our harbor and the building of locks by the Government along our river system above Mobile has also been of material assistance to us, but is going to avail us much more in the next 10 years than in the past 10. We will shortly be able to barge coal, iron and cement from the mines to Mobile by water all the year round, and this will help us as a port tremendously.

NASHVILLE, TENN.

Mayor Hilary E. Howse.

Several causes have contributed their quota toward our substantial increase in population. (1) I, while a State Senator in 1905, introduced a bill which passed the Legislature annexing considerable thickly-populated territory, which brought into the city approximately 10,000 people. At the same time our manufacturing interests have steadily increased. Our trade has constantly expanded, and hundreds of elegant homes are being erected throughout the city. It is well known that Nashville is located on the banks of Cumberland River, and surrounded by some of the most fertile farms in the entire South, making it one of the cheapest places to live in in the entire country.

Thirty-six and five-tenths per cent. does not represent the true and correct growth of the city of Nashville. On account of the fact that street cars have been extended, suburban street railways completed and many thousands of people have moved out of the corporation, building up around and adjacent to the city limits thickly-populated districts. If these were all annexed to the city I have no doubt that our population would be 150,000 instead of 114,000.

NEW BEDFORD, MASS.

Mayor Charles S. Ashley.

New Bedford's remarkable population increase—54.8 per cent. between 1900 and 1910—is not the result of territorial expansion. It is due entirely to the city's industrial development.

The main factor in this growth is undoubtedly the appreciation of the investing public of the fact that New Bedford is the first city in America in the manufacture of fine cotton goods, and that there is a reason therefor. The reason that New Bedford is a leader in the production of fine cotton goods is because it possesses most favorable climatic conditions, an al-

ready well-established fine textile trade, and the kind and quality of managers and workmen to bring results.

When the capitalists of New Bedford many years ago were compelled by a shift of economic conditions to abandon their interests in the whaling industry, they turned their attention to the manufacture of cotton goods. With a far-sightedness for which they deserve great credit, they decided upon the manufacture of the finer grades of cotton yarn and cloth, appreciating that these were more staple products than the coarser goods which many of the Northern mills were at that time turning out. Since that time the manufacturers have stuck to fine goods production.

The quality of the goods made and the demand for the New Bedford product has resulted in enormous profits to the mills, and in consequence the attention of investors has been thereby attracted. This has meant the erection of new mills, and to operate these mills new people, the most skilled in their lines of work, have been drawn to New Bedford.

The efforts of the municipal administration have been to make New Bedford a clean, healthy, attractive city. These efforts are appreciated, with the result that New Bedford has an industrious, contented, law-abiding, home-loving population second to no city in the land.

With an advantageous geographical location, and possessing a safe harbor capable of immense development, New Bedford is destined to make a mark, before many years, as a commercial center, as well as an industrial one.

In the growth of the past 10 years the increase in the last five has been much greater in proportion, and with favorable conditions everything points to a steady continuation of gain at the rate of the past decade.

NEW BRITAIN, CONN.

Mayor Joseph M. Halloran.

It affords me great pleasure to speak for New Britain in connection with your inquiry regarding the splendid ratio of healthy growth shown by our city in the decade between the Federal census of 1900 and 1910, which, as you remark, is way in excess of the average growth of cities who began the last decade with a population of 25,000, approximately.

Our growth is due, briefly, to men and manufacturing, and our fine quality of both. The cosmopolitan population of New Britain consists of an assortment of races as broad as the world itself. We have a fine quality of the Irish, German, Swede, Italian, Pole, Greek, Armenian, Persian, Lithuanian, Ruthenian, Hungarian and a dozen others.

Our manufacturing industries stand second to none in the class of products which they send out to the markets at home and abroad. We are the headquarters of the builders' hardware manufacturing of the world, and the men who have built up our great plants and are keeping them in the front rank despite the keenness of the competition and the handicaps which they labor under, because of our distance from the coal and iron fields, are of the quality that will always maintain supremacy in their line.

New Britain started its existence with a population of 3059 in 1850. It had absolutely none of the requirements for a growing manufacturing center. There was no natural water-power; there was no special railroad facilities, being removed even from the main line by an upgrade branch struggling for three miles; raw products were available only at a great disadvantage; yet its growth was assured from the start, and the credit is due wholly and entirely to the character of the pioneers. The manufacturing foundation which they

set down so carefully and solidly are doing duty today. There has been wonderful expansion on these foundations, buildings have been erected covering acres where the original manufacturing homes covered corner lots, but the successors of these pioneers have never been tempted away from the old moorings of honest dealings and honest goods.

They have been foremost in adopting new ideas and developing modern machinery, but they have not adopted the modern ways of financial enlargement. There has been no watering of capital. Every dollar of their capital is represented by actual values in stock, machinery and lands many times over. The city was founded upon the rockbed of confidence, and it was bound to grow. We have had the Corbins, the Stanleys, the Camps, the Harts and the Norths, the Russells, C. B. Erwin, the Landers of three generations, C. M. Jarvis and H. C. Noble of contemporaneous times, and the end is not yet.

The progress of New Britain, its expansion along healthy lines in wealth, influence and importance is as certain as the revolutions of the earth around the sun. Progress is our middle name. "Watch us grow."

NEWARK, N. J.

Mayor Jacob Haussling.

Newark's wonderful increase of population—approximately 101,000—in the last decade was due chiefly to the increase in number and expansion of our manufacturing establishments. This, in turn, may be ascribed to the splendid situation of the city and her natural and artificial advantages. No considerable populations were included in the two annexations of territory which were accomplished during the period in question, so that the city's growth has been purely the result of her own individual progress. Located but eight miles from New York, we command the market afforded by the great metropolis, and at the same time with low taxes, cheap lands for factory sites and operatives' homes, splendid schools, well-paved streets, a water supply for purity and softness unsurpassed on the Atlantic seaboard, exceptional railroad facilities afforded by the principal trunk lines of the country, deep water navigation, with extensive harbor improvements under municipal auspices planned, and lastly, a great industrial population embracing every class of the skilled artisan, Newark presents almost ceptional railroad facilities afforded by the turer. Within a few months the McAdoo and Pennsylvania Railroad rapid transit lines, communicating directly from this city through tunnels under the Hudson River to New York, will have been opened, thus largely augmenting our transit facilities to the metropolis and greatly reducing the running time. This will not only heighten the attractiveness of the city to the manufacturer and business man, but will also tend to increase the commuting population, which is now a considerable element.

NEWARK, O.

Mayor John M. Ankele.

Regarding the phenomenal growth of Newark, O., I regard as the main factors the manufacturing industries and trade expansions.

Certainly it is not the annexation of outlying territories, and had our officials and citizens seen fit to take in the closely-populated resident sections directly outside our city limits, I am sure that our increase in population, instead of being 39.9 per cent., would have been 50 per cent. at least, but the corporate limits remain practically the same as 10 years ago.

It is to our manufacturing industries that we point with pride and give credit to our city's growth. Several have more

than tripled their output, and others have grown with almost mushroom-like rapidity in the past few years.

Newark is exceedingly fortunate in this respect, that we have men at the heads of our industries who are energetic, indefatigable workers. Men interested in their business and consequently interested in the city. We are ideally situated geographically for all manufacturers, almost in the center of the State, and on two trunk lines of railroad, natural gas plentiful and good water.

Newark is a city of homes, good homes, good schools, paved streets, a beautiful city to live in, and while I am proud of our record growth in the past 10 years, I am sure that we will exceed it in the next. While our growth as a city has been perceptible to everyone, still it has not been a boom growth; simply a city that has caught its stride and will keep it. Thanks to the wide-awake and progressive business and professional men who make it their home.

NEW YORK, N. Y.

Mayor W. J. Gaynor.

I cannot attribute the growth of this city to any particular thing. It is simply a great city at the seaboard, the metropolis of the nation, growing from a variety of causes, just as London is growing, or Paris, or Berlin.

OKLAHOMA CITY, OKLA.

Mayor Henry M. Seales.

The main factor in the growth of Oklahoma City is the fact that it is located in the center of a very rich State, not only from an agricultural, but also from a mineral and live-stock-raising standpoint. It might be said, and wisely, too, that this constitutes the center or ground work of this city's prosperity around which all of the other factors assemble.

While the population of this city shows a most remarkable increase, it possesses a stamina equal to that of any of the old States, and statistics bear out the statement. Oklahoma has a greater population right now than Kansas, which has built the great city of Kansas City, a greater population than Nebraska, which has built Omaha, or Colorado, which has built Denver.

PASADENA, CAL.

Mayor Thomas Earley.

We annexed territory that had a population of between 4000 and 5000. We do not cater to manufacturers for our city. We are trying to make it an ideal home city. We have no saloons, and have not had any for more than 23 years. We believe in making our city as attractive as possible by keeping the streets in first-class, clean and sanitary condition and making first-class permanent improvements. The city also takes charge of and is planting out shade trees, and during the last year and a half we have planted out more than 6000 shade trees.

We have fine churches of every denomination; first-class schools, including Throop Polytechnic Institute and Throop Academy. We have an ideal city farm of 550 acres, which takes care of the sewage. There are 115 acres in walnuts, and we are contemplating planting out over 100 acres to oranges.

We are trying to make Pasadena an ideal city from a civic standpoint. Pasadena is free from party politics. We select men for offices without regard to their party affiliations, and in every way try to conduct our city as any business man would run his business.

We have our own municipal light plant, and are lighting our streets in fine shape, and also furnishing electric energy to our citizens at a rate of five cents per kilowatt, and from four cents to less than two cents

for power, according to quantity used.

The assessed valuation of Pasadena in 1887 was \$1,001,737; today it is \$44,928,100.

The city collects all table refuse and garbage free, so as to keep the city in a good sanitary condition.

I think today Pasadena is one of the finest home cities in the world. We have an ideal climate and an ideal population.

PASSAIC, N. J.

Mayor Bird W. Spencer.

The main factor in the growth of population of the city of Passaic, namely, 113 per cent. between 1890 and 1900 and 97.2 per cent. between 1900 and 1910, is the expansion of our manufacturing interests, and is not in any way attributable to any annexation of outlying territory, as no annexation has been accomplished during 20 years past.

The growth of the woolen goods industry in this city has had considerable to do with the growth of population, and the fact that our manufacturing interests are very much diversified, embracing woolen goods, rubber goods, cotton goods, handkerchiefs, bleacheries, etc., enables the working class to find employment nearly all the time, as against a community made up of one particular class of manufacturing, which when dull makes idle so many wage-earners.

PITTSFIELD, MASS.

City Clerk Alfred C. Daniels.

At the Mayor's request: Pittsfield's growth in the past 10 years has been due in the main to the expansion of the General Electric Co.'s plant here. This plant has grown from an insignificant beginning until it now employs about 4500 hands. Most of the men are men of families, and were transferred here from Lynn and Schenectady. Other industries, notably the Sampson Automobile Works, now owned by the United Motors Co., the Teleelectric Co. and the Jacobson-Brandow Company, have contributed their share toward this growth, but the General Electric Co. has been the main factor.

Pittsfield is primarily a manufacturing city, counting among its products electrical machinery, clothing, woolen goods, cotton goods, automobiles (commercial and pleasure vehicles), paper-mill machinery, piano players, spark coils and switches, voting machines, knit goods and many other articles. So it is apparent that its growth can be traced only to that source. So large has been the influx of citizens that there are not enough houses available to satisfy their needs, and many live in the surrounding towns, some coming even from North Adams, 20 miles away, to work each day. The daytime population of the city is, therefore, considerably larger than the night population.

While its varied industries have contributed some to the growth, Pittsfield might be set down as a one-industry city, due to the retention of the General Electric works.

PORTSMOUTH, VA.

Mayor J. Davis Reed.

In 1900 the area of the city was 1020 acres and its population 17,427.

In the early part of 1909 the city annexed some 845 acres of outlying territory, the population of which, as ascertained by local enumerators, was about 9000, though I believe the United States enumerators found nearer 11,000 in the annexed territory than 9000.

Of the total increase in population, 15,762, I should say 11,000 were in the territory annexed and 4762 in the old part of the city.

You can see from the comparatively small area of the city in 1900 that the territory annexed was to all intents and purposes a part of the city, and should have

been annexed years ago, and would have except for the number of negroes in certain section of the territory.

I should say the population of the territory annexed was not over 6000 in 1900, so that, say, 10,762 more inhabitants are in the present area of the city than were in the same area in 1900.

This increase in population is owing, in my opinion, to several causes—to the enlargement of the United States Navy-yard located here and the construction of docks in the navy-yard and the increase in work on Government vessels, the navy-yard now employing some 3000 men; to the increase in the number of manufacturing plants along the Norfolk & Portsmouth Belt Line Railroad, which runs through the suburbs of the city; to street improvements; to improved street car and ferry facilities, making the seaside and the city of Norfolk more accessible, many who work in Norfolk residing in this city.

ROCHESTER, N. Y.

Charles E. Ogden, Secretary to Mayor

Mayor Edgerton directs me to state that the main factors in the notable growth of this city are the diversity of its manufacturing interests, its splendid surrounding agricultural territory and the enthusiasm and active interest of its citizens. Our people are mostly boosters, and we have very few, if any, knockers.

The Rochester spirit, as we call it, has become a part of our city life, and we are all interested in pushing the best interests of the city. We have annexed considerable outlying territory, and there is a movement on foot to present a bill to the next Legislature to add further territory and encourage suburban development.

ROANOKE, VA.

Mayor Joel H. Cutchin.

I beg leave to submit the following as my views for the cause of the growth of the city, to wit:

Roanoke city is headquarters for the Norfolk & Western system, situated in a beautiful valley about eight miles wide, lying between the Blue Ridge and Allegheny Mountains, and is the gateway to the southwest section of Virginia, and we might say, to a large portion of West Virginia. The climate is unexcelled. The winters are mild and protected from the cold, bleak winds of the West and Northwest by the Allegheny Mountains, and from the East winds by the Blue Ridge Mountains. The Allegheny Mountains, within a very few miles of the city, being over 2500 feet above sea level and 1700 feet above the city, and on the east the Blue Ridge towering almost as high. The summer season is tempered in the same way, and the narrow valley between the two ranges of mountains seems to have the effect of causing pleasant breezes at all times. Seldom during the summer is the weather so warm that a blanket is uncomfortable. Mosquitoes are unknown.

The water supply of the city and the surrounding country is of the purest character, the city being supplied from Crystal Spring, with less than 30 bacteria to the cubic centimeter. The city has many churches of every denomination; splendid school facilities, with many up-to-date school buildings. The Academy of Music and other places of amusement; an attractive summer resort on Mill Mountain; colleges and ladies' seminaries, three in number, within a small radius of the city. Mountain scenery as fine as there is in the land; a live up-to-date population; a progressive city administration; the best fire department in the South; splendid police department, with a most orderly and quiet people. These things, when taken into consideration, make Roanoke a desirable place in which to live. The public school system and churches, with the colleges nearby,

make the city popular as a place of residence with people having means and desiring to rear their families among pleasant surroundings, with the best educational advantages.

I regard the location and the natural advantages of the city as the main reason for its rapid growth. It is true that the Norfolk & Western Railway Co. gives employment to a large number of men engaged in various lines. The machine shops give employment to a large number of men, and, owing to the growth of the Norfolk & Western system, is continually giving employment to a greater number each year. In addition to the machine shops, the Virginia Bridge & Iron Co., with its principal plant in this city, gives employment to quite a number of men, to say nothing of the smaller manufacturing plants. The population of the city is growing by leaps and bounds. Roanoke has a vigorous, wide-awake, live citizenship, and while no special efforts have been made by commercial organizations or others to induce the location of manufacturing plants, the city is growing larger by reason of its desirability as a place of residence and a place in which to do business. The Commercial life of the city is active and aggressive. A large territory is tributary to the city, and the trade of the city is constantly growing in importance and volume. The Virginian Railway will add to the importance of the city, and the opening up of a new line from Winston-Salem, connecting the coal fields by way of Roanoke with Charleston, S. C., promises increased importance to the city. Roanoke is getting to be a railroad center of some importance. The lines of the Norfolk & Western, radiating from Roanoke to Hagerstown, Roanoke to Norfolk, Roanoke to Columbus and Cincinnati, Roanoke to Bristol and Roanoke to Winston-Salem, with many branch lines in other directions, opens up a tremendous territory to the city. Every indication points to a more rapid increase in population for the next decade. Ten years ago the people of the city and of the country did not have the confidence in Roanoke's future that it now possesses. The people of the city were not as well able financially to undertake enterprises absolutely necessary for the growth of the city. During the past 10 years many fortunes have been accumulated in the city, and today there are a great many men of means where 10 years ago there were but very few. Many will be seeking investment in the near future, which will necessarily add to the importance and growth of the city.

Roanoke is the only city of any size in the State of Virginia that has not annexed outlying territory within the past few years. Not a foot of territory has been annexed since 1892, while the suburbs have been built up. Virginia College for young ladies, Roanoke College for men and Hollins Institute for young ladies have a tendency to add to the importance of Roanoke city.

To reiterate, I regard Roanoke's favorable location, desirable climate, pure water and healthfulness as the main factors for its growth.

SACRAMENTO, CAL.

Mayor M. H. Beard.

Among the many things that contributed to our increase in population are the many public improvements that have been made and has inspired the people with faith in the future of Sacramento, causing real estate values to increase and modern buildings to be erected. The general prosperity of the State, and particularly the prosperous condition of the country on all sides of this city, partly caused by the division of large grants of land into small farms and partly by the building of one transcontinental

railroad to this city, the building of one electric interurban road up the Sacramento Valley and one down the San Joaquin Valley, and new lines of steamers between Sacramento and San Francisco. Great trade expansion was caused by these new lines of transportation.

The geographical location of Sacramento contributed largely to its great growth. The city is so situated as to be a railroad center, and is on the Sacramento River, the largest water course in the State. The increase in population is all our own, as we have not annexed any outside territory.

SPRINGFIELD, MASS.

Mayor Edward H. Lathrop.

The growth of our city is fairly attributable to the expansion of trade, large manufacturing enterprises, old and new, and a rapidly increasing and increased number of new citizens, a large accumulation of new manufacturing capital and increased production of old-established concerns, and the pressure of large and varied kinds of industries. There accrued to our population last year about 7000 fixed, desirable, industrious people. The population of the city has not been increased by territorial expansion at all. There has not been for a hundred years an addition of territory, but, on the contrary, several towns have been formed out of the older Springfield.

SPRINGFIELD, MO.

Mayor Robert E. Lee.

I am very glad to give you the principal reasons for our city's growth in population of 51.3 per cent.; also of the increase in wealth.

First—Springfield is located on the summit of the Ozark Mountains, at an elevation of 1400 feet above the sea level, surrounded for many miles by a country rich in agricultural and horticultural products. Just rolling enough for good drainage, from which can be grown a diversity of crops, and from which a complete failure is unknown.

For an all-year climate our location is unsurpassed by any point in the United States. We are free from the bitter blasts of the North in winter and the burning sun of the South in the summer. We are supplied with pure spring water, free from malaria, and the healthfulness of our city is far above the average.

Springfield is not only a pleasant place in which to live, but there are plenty of business opportunities in which a man may engage, so that he may support his family with many of the luxuries of life, as well as the necessities. The population of Springfield has not only increased in numbers, but also in wealth. Our assessed valuation, which is on a 50 per cent. basis, was \$6,500,000 in 1900, while in 1910 it is \$15,000,000, showing an increase of 130 per cent.

The reasons for this phenomenal increase are many, and I am pleased to say we are just beginning to grow. Springfield is being recognized as a manufacturing center. The favorable situation of our city and its many advantages as a great distributing point enable it to extend its trade in every direction and to find a ready market for the products of its manufacturers. We are 238 miles from St. Louis, 202 miles from Kansas City and 284 miles from Memphis. These are our nearest large cities, and they are all far enough away to give Springfield a large trade territory in which she has no competition that she cannot more than meet.

Our manufacturing and wholesale institutions represent a capital of \$5,932,000 and employ 2219 men. This does not include the St. Louis & San Francisco Railroad shops, with an investment of over \$3,000,000 and employing over 2000 men,

with a payroll of \$300,000 per month. Springfield cans and ships more fruit and vegetables than any other city in the Ozark country, which amounted to 2,611,490 pounds in 1908, the last year for which such statistics are at hand.

Our population has been increased less than 3000 by the extension of our city limits. The diversity of opportunities in a business way, with our ideal climate and social advantages, accounts in a large measure for our increased population. Springfield is a beautiful city in which to live, being noted for its schools, churches and beautiful homes, with large, well-kept lawns. We also bear the distinction of being one of the three best electric-lighted cities in the United States.

If not restricted to 300 words I could give you a much fuller description of our city and its surroundings, which accounts for its growth and the certainty of 75,000 by the time our next census is taken.

TAMPA, FLA.

Mayor D. B. McKay.

The main factor in the growth of this city during the past decade, which witnessed an increase of 143 per cent. in population, was the expansion of the business of the manufacture of clear Havana cigars. This industry enlarged during the period about 100 per cent., with a corresponding gain in population. The twin center and is on the Sacramento River, city of West Tampa, contiguous and almost solely devoted to this industry, is not included in our count, and would add at least 10,000 to the number with which we should be credited. The figures for that city are not yet available, and it will be found to have a greater gain than the parent city during the past 10 years, rendered in percentage of growth.

The next most valuable element in the growth of the city is the increase in its wholesale trade and commerce, including the export of lumber, ties and other commodities, which commerce has almost entirely grown up within the 10-year period. Our trade expansion has more than doubled the capital employed, and still more largely increased the number of persons engaged in it directly.

Another factor is the improvement of the harbor and the construction of a navigable channel and extensive terminals on two systems of railroad for seagoing vessels of large size and the accommodation of the commerce handled by them. This has been so closely allied and intertwined with the expansion of the wholesale trade that it is difficult to separate the two in any systematic way. Treating them as a unit, they are fully as important as the manufacturing interest, though possibly not adding quite so much to the population.

Our city has annexed some outlying territory, but not very thickly populated, embracing not more than 3000 people at the highest estimate.

The addition of a new railroad to our system, with the construction and expansion of several important branch lines of the two leading systems, has added largely to our population and commercial strength. All these branch lines, embracing about 500 miles of trackage through thickly-settled and prosperous localities, are operated from this city as their base, with double service each way every day from Tampa to their various terminals, making them virtually independent roads, and they very necessarily figure very largely in the growth of the city in every respect.

Another factor worthy of mention is the large number of tourists who spend the winter here, coming from the North, and whose presence for several months in the year gives employment to a considerable number of people the year round. These tourists were all absent, of course, when

the census was taken. To the leading features enumerated may be added a considerable fishing industry and quite a number of various manufacturing enterprises on a small but profitable scale, as well as the location here of a good many people who desire to avail themselves of this center for speculation and the practice of different professions. Our growth is healthy, normal, well rounded, not depending unduly upon any one feature or factor, but sufficiently distributed to afford perfect security.

TERRE HAUTE, IND.

Mayor Louis Gerhardt.

Our phenomenal growth during the last 10 years is due to the remarkable development of the great coal field in the immediate neighborhood of the city—a coal field that the geologist says will supply coal in abundance for 200 years; to the resulting influx of great factories, who save thousands of dollars annually on their coal bills through the elimination of freight charges; to the development of the interurban lines, that hourly pour shoppers into the city from all directions, thus making towns within a radius of 30 miles tributary to our merchants; to the exceptional railroad facilities, placing our factories within easy access of Chicago, Cincinnati, Louisville, St. Louis and Cleveland; to the energetic efforts of the Commercial Club, composed of public-spirited citizens; to the abundant water supply of the Wabash River.

Our growth is not due to annexations. One mile away, connected with the city by a paved street, is a town of 4000 people, not annexed and not counted in our increase, though to all practical purposes a part of the city, and we have many people immediately outside the city limits. At the present rate of growth we expect 100,000 in 1920.

TULSA, OKLA.

Mayor L. J. Martin.

The growth of Tulsa, from a village of 1330 ten years ago to its present population of 18,184, exceeding in rate of increase every other incorporated town in the United States, was not due to annexation of outlying territory. With more than 6000 population to the square mile, Tulsa today is the result of unusual natural advantages here developed by energy and originality.

When Tulsa was but a railroad flag station her people began to build here a great city, and they never wavered in the faith. Nature had solved the primary questions of food, water and fuel supply by placing here a most fertile soil, an extensive coal field and a great river. Lacking transportation, the people of Tulsa went out and added four more railroads to the one already here. The town grew amazingly from that day. Brick, ice, lumber and flour soon were being made here, and wholesaling commenced.

Then came the discovery of oil and natural gas, a million dollars a month production added to power at \$2 per horse-power per year. The first factory fund in Oklahoma was one of \$220,000 raised here three years ago. More factories and wholesale houses came. Machinery, glass, cottonseed oil, refined petroleum and automobiles were added to the list of products made in Tulsa. Today 5000 men are employed in industrial activities, and receive each month \$360,000 in wages. New plants are coming month by month, yet the field is most inviting, and scarce half occupied as yet.

Our commission form of government helps to bring into action the best energy of the citizen. This is seen in our churches, schools, colleges, daily papers, electric street and interurban railways; in

asphalt paving, cement walks, storm and sanitary sewerage, public parks, city-owned water, pure and abundant; in the hundreds of homes and the solid mile of brick, concrete and granite business frontage built within the year.

The future is most inviting. Ten years ago, when 31 towns in present Oklahoma were larger than Tulsa, the avowed intention to build here the great city of the State seemed preposterous; today, having overtaken and passed 29 of these places and rapidly overhauling the other two, the future of Tulsa is seen to be as inevitable as the coming of the years.

WEST HOBOKEN, N. J.

Mayor Charles A. Mohn.

West Hoboken, lying at the top of the Palisades just west of the Hudson River and directly opposite the city of New York, and having an average tax rate of but \$14 per \$1000 of valuation, came to be favorably looked upon by homeseekers, and a great deal of building has been done during the past 10 years. The silk-weaving industry is represented by four large factories, employing many thousands of people, mostly German, Swiss and Italian. The manufacture of Swiss embroideries has been introduced during recent years, and there are at present a great many factories in this line. Our schools are good, and we have good transit facilities, our town being but 35 minutes' travel from the business and shopping centers of New York. No outlying territory has been annexed, and the town at present is but 30 city blocks in length and six blocks wide, although it is the largest municipality with a town form of government in the United States.

WICHITA, KANS.

Mayor C. L. Davidson.

The secret of the remarkable increase in the population of the city of Wichita between 1900 and 1910 was brought about largely by the development of the country south and west. This territory is vast in its extent and unlimited in its natural resources. The Orient Railroad, which is building from Wichita southwest through Old Mexico to the Pacific Ocean, has opened up a splendid territory tributary to this city. Wichita is the distributing point for the southwest for 500 miles.

Through the zeal of our business men Wichita has been made the central point for manufacturing all products that are natural to this section. For instance, hogs and cattle are manufactured here into meat products. Our wheat and corn is ground and shipped all over the world. Alfalfa has developed a wonderful industry in a well-balanced stock-food product. Straw is being utilized in the manufacture of paper and straw boards.

Eleven hundred traveling men make Wichita their home. There has been no increase in population from taking in suburban towns or villages.

WOONSOCKET, R. I.

Mayor James Mullen.

In my opinion, this notable increase (38.7 per cent.) in our population during the last 10 years is to be attributed principally to the fact that many big manufacturing concerns, giving employment to thousands of hands, have been induced to locate here on account of this being considered a good industrial center, with plenty of good, desirable help always available, its freedom from serious labor troubles and lawlessness of all kinds, its splendid natural manufacturing facilities, its efficient city fire, water, highway and police departments, its splendid railroad facilities, and the very generous treatment accorded the several large concerns who located here by the city in extending them exemption from taxes for a period of from

10 to 15 years. Quite a few of the old establishments have also increased their producing capacity very largely, thus giving employment to hundreds of families who moved in and became permanent residents. Woonsocket is now a great manufacturing center for a variety of industries, a few of which are rubber footwear, woolen and cotton goods, yarns, etc. The outlook for Woonsocket's equally wonderful progress for the next 10 years is most promising.

YORK, PA.

Mayor Jacob E. Weaver.

The growth of the city during the last 10 years has been a steady one, and, in my opinion, was due to manufacturing industries and trade expansion. Our manufacturers during that time, with but few exceptions, have employed their men full time and have been able to sell their products in the markets of the world.

We manufacture in this city nearly everything manufacturable, and we sell in our mercantile establishments everything that is salable. And we should be glad to have more manufacturing located with us.

FROM OTHER SOURCES.

Jacksonville, Fla.

Misunderstanding of the purpose of our inquiry, to secure an expression from a municipal officer, led to the correspondence being turned over in a few instances to representatives of commercial bodies. For instance, Mayor W. S. Jordan of Jacksonville, Fla., referred our letter to Secretary H. H. Richardson of the Board of Trade. From the latter's reply the following is derived:

"In addition to the large growth in the city limits, the suburban population has also grown tremendously. In the suburbs of Jacksonville it is estimated conservatively there is a population of about 15,000 people, making about 72,000 population for Jacksonville and suburbs.

"We attribute the tremendous growth of Jacksonville in the past decade to two principal causes: First, advertising the advantages of the city to the nation; second, to the deepening of the channel from the city to the sea.

"It should be noted that the increased population is not caused by increased city limits, as there has been no surrounding territory taken in by the city of Jacksonville during the past 10 years.

"With reference to the deepening of the channel, will say that this organization for 20 years past has made this one of its principal objects, and through the active work of its river and harbor committee induced the bonding of the county for \$300,000 to make the first improvement, in order to show the National Government that we had faith in our work. As a result of this expenditure of home money and the continued activity of the river and harbor committee the National Government has from time to time made appropriations for the improvement of the river, until an amount of about \$4,000,000 has been expended, increasing the depth of 7 feet 20 years ago to 24 feet at mean low tide today from the city to the sea. With every increased foot of water in the channel our commercial importance has grown, as shown by the statistics of the port compiled every month by this board. The 24-foot channel secured 18 months ago was outgrown within a year, and we now have the 30-foot channel work started. The increased commerce naturally brought with it many other industries and rapidly-increasing population.

"The city and county have done their best to keep pace with the rapid growth in the way of the brick paving of streets and roads of the county, the extension of sewerage, water and electric lights. The county of Duval this year bonded itself for \$1,000,000 to complete its system of good roads to its county lines.

"There is probably one other cause leading to the rapid growth of the city in the past 10 years, and that was the great conflagration of 1901, in which upwards of \$15,000,000 worth of property was destroyed, with only \$5,000,000 insurance; but the vim, grit and energy of our people so demonstrated itself that foreign capital and increased population rapidly followed, and during the past nine years there has been upwards of \$25,000,000 worth of new buildings erected in this city.

"To the combination of the above three causes can be attributed the remarkable growth of this city in the past 10 years."

Danville, Ill.

E. P. McNicol, managing secretary the Industrial Club of Danville, Ill., writes:

"After a thorough consideration as to the causes of the 70.4 per cent. increase in population in this city, I think that I am justified in saying that this city's remarkable growth in the last 10 years is directly due to two causes. During this period three suburbs, all of which are now heavily peopled portions of the corporate limits, were annexed. The second primary factor in our growth is the rapid development of the city's manufacturing resources. Ten years ago there was not a factory here of any importance. Now Danville has in the C. & E. I. shops one of the largest plants of its kind on the entire Frisco system, with a capacity for 2000 men; a big glass works, one monster smelting plant, a car manufacturing company and other diversified industries of a smaller nature. These, in addition to the coal mines at the edge of the city, and Danville's exceptional railroad facilities, you can readily see were more or less attractive to outside capital and skilled labor. In other words, Danville is experiencing a steady and sure growth along all lines of business, and there are many who are of the opinion that within the next 10 years still greater developments will be made."

Oklahoma City.

Mr. George B. Saunders, secretary to the Mayor of Oklahoma City, in sending the latter's statement added that the location of two big packing plants costing \$3,000,000 each in the city within the past year is an indication that outside capital is interested in what the city is doing and believes in its future. He writes:

"Finally may be mentioned the fact that nine-tenths of the 6000 miles of railroad operating in Oklahoma belongs to the four trunk lines—Atchison, Topeka & Santa Fe; Missouri, Kansas & Texas; Chicago, Rock Island & Pacific; St. Louis & San Francisco. These four great Southwestern lines intersect at Oklahoma City, where passenger and freight headquarters are maintained in charge of Oklahoma traffic. Not only do these lines connect this metropolis with the big outside markets on an equitable inbound basis, but the same railroads constitute the avenues of distribution whereby 80 per cent. of our trade territory is reached without transfer. Even beyond the boundaries of the State outbound freight moves quickly and on an extremely favorable mileage rate."

Mr. Saunders interviewed Manager J. H. Johnston of the Chamber of Commerce, with a membership of 1200, and he said:

"Every agricultural implement house in the country, with one or two exceptions, has branches in Oklahoma City and distribute from this point, and Oklahoma City is being made essentially the distributing point of the Southwest, covering not only the State of Oklahoma, but also the Panhandle of Texas and New Mexico. There is already in this city of 21 years' growth a good sprinkling of manufacturers, and more are coming day by day as time wears on. Oklahoma City's greatest prosperity dates from the panic of 1907, when the conditions all over the country

were so sluggish as to create unrest and dissatisfaction on the part of the people in the East with their surroundings. They were looking for a new field, and Oklahoma had just then become a State. What more natural than that those people should gather their belongings and betake themselves to the newest State in the Union. They came, they saw, they conquered, in that they were able to convince their moneyed friends back home that this was a great field for investment as well as for endeavor, and their friends sent them the funds to invest to the mutual advantage of all parties interested, including Oklahoma City as a community."

San Jose, Cal.

Joseph T. Brooks, secretary Chamber of Commerce, San Jose, Cal.:

"San Jose has had a natural, steady growth, and its limits are very narrow, indeed. We have a very large population just over the line of our limits, so that if we were able to include the seven immediate connecting districts our population would more than likely run to about 60,000. We are now organizing a campaign for a greater San Jose, which we hope to carry."

The Birmingham Iron Market.

[Special Cor. Manufacturers Record.]

Birmingham, Ala., October 31.

The feature of the pig-iron market the past week has been the interest manifested by buyers in the way of inquiries. The total tonnage booked was something like 6000 to 7000 tons, being on basis of \$11 per ton at the furnace for the balance of this year and \$11.50 per ton for the first quarter of 1911. The volume of business, however, done for next year has been small. Buyers appear to manifest but little interest. It is believed that should the furnace companies South open their books for the first quarter and first half of next year on a basis of \$11 per ton at the furnace substantial lots could be easily placed, and very promptly. As matters now stand, the spot market is comparatively inactive at \$11, and with the knowledge on the part of buyers of large stocks on yards of furnace companies there is little chance of a substantial buying movement in the face of these facts, for the buyer can well afford to take a chance of 50 cents per ton on the market going up. If it should advance 50 cents per ton, \$11.50 per ton is not a high price for his product, and should the \$11 price trail through the first quarter (and possibly first half) he has gained his point. Production, it would seem, must be materially curtailed before anything like stability and better conditions in the pig-iron market can be looked for.

There has been no decided improvement in the water-pipe market, and no lettings of unusual consequence are recorded. Small buying continues in about the same proportion as for some time past. Following are prices per net ton f. o. b. cars here: Four to six-inch, \$20; 6 to 8-inch, \$19; 8 to 12-inch, average of \$18.50 to \$19, with \$1 per ton extra for gaspipe.

The scrap-iron market is inactive, and some low levels in prices have been reached. In fact, there has not been enough real buying to test the market; hence only nominal quotations are given below. Following are prices per gross ton f. o. b. cars here:

Old iron rails, \$13.75 to \$14.24.

Old steel rails, \$11.50 to \$12.

Old iron axles, \$16.50 to \$17.

Old steel axles, \$15.50 to \$16.

No. 1 railroad wrought, \$11 to \$11.50.

No. 2 railroad wrought, \$10.50 to \$11.

No. 1 machinery, \$10 to \$10.50.

No. 1 steel, \$9.50 to \$10.

Old standard car wheels, \$12 to \$12.50.

Light castings, stove plate, \$8.50 to \$9.

Mr. Cecil Grenfell has been in the city

the past week going over matters in general in connection with Southern Iron & Steel Co. When seen he expressed satisfaction in regard to the course matters are taking in the conduct of the affairs of the company under the management of Mr. James Bowron; also as to the physical condition of the plants. He left today for New York, where it is thought he will confer with a member of the firm with which he is connected in regard to a successor to Mr. Hassenger as president of the Southern Iron & Steel Co.

On tomorrow the rail committee of the American Railway Engineering and Maintenance of Way Association will meet at the Hillman Hotel. It is the custom of this committee to meet periodically for the purpose of discussing the rail situation generally, and whenever possible a steel center is named for the meeting place. While in the city the party will be shown over the steel mills at Ensley of the Tennessee Company. This is the first visit of this association in the city, and plans are being made to make their trip an enjoyable as well as interesting one.

A party of prominent German steel men visited Birmingham the past week, and while here were shown over the steel mills and new construction work being carried on by the Tennessee Company in and around Ensley and Corey. In the party was Karl Schneider of Coblenz, Germany; H. Schubert and M. Rohlan of Rombach, Germany.

Texas Minerals.

In an address at the Fort Worth meeting last week of the Industrial and Development Congress, Director William B. Phillips of the bureau of economic geology and technology of the University of Texas, made a comprehensive address on the development of the mineral resources of Texas, representing a total production in the past quarter of a century of more than \$160,000,000, and now averaging annually between \$15,000,000 and \$20,000,000. The chief items of production have been petroleum, coal, lignite and clay, constituting about 72 per cent. of the total, and the remainder including building stone, silver, salt, mineral waters, quicksilver, cement, etc.

The Battle Abbey.

The Confederate Memorial Association, J. Taylor Ellyson, president, Richmond, Va., has selected the architects who will submit plans and specifications for the proposed Battle Abbey, for which \$150,000 is available. Plans and specifications are to be filed by December 22 with David C. Richardson, Mayor of Richmond. The architect whose plans are accepted will have supervision of construction; the architect second in the competition will receive \$400, and the next three architects will receive \$200 each. There are 87 individuals and firms of the North, East, South and West in the list of approved architects.

Interested for Virginia.

In reply to an inquiry as to whether he is interested in the proposed railway line between West Point and Urbanna, Governor Wm. Hodges Mann of Virginia writes to the MANUFACTURERS RECORD:

"I have no pecuniary interest of any kind in the road, but as Governor of Virginia, desiring the progress and development of the State, I am doing what I properly can to secure its construction."

Wants Church Plans.

Mr. C. E. Oliver, chairman of building committee, Dadeville, Ala., wants architects' plans for erecting additions to and remodeling church building at cost of from \$6000 to \$8000. The present building is of wood and veneered brick.

FOR PANAMA EXPOSITION AT NEW ORLEANS.

[Written for the Manufacturers Record.]

Letters from manufacturers and others in different parts of the country favoring New Orleans as the site for the 1915 exposition in celebration of the completion of the Panama Canal received since the publication of 200 of like kind in the MANUFACTURERS RECORD of October 27 are as follows:

Geo. L. Bennett, assistant to president, Page Woven Wire Fence Co., Adrian, Mich.:

It had not occurred to us that there would be personal reasons for any choice on our part as to the site to be chosen. However, after reading your circular we are inclined to add that your arguments look good to us, and we are inclined at the present time to vote in favor of New Orleans. We think you are certainly right in your contention that no site could be chosen which would draw so strongly upon the South American countries as will New Orleans. While our whole country is interested in the construction of the canal, it is undoubtedly true that primarily its completion is of especial interest to the South and Southwestern sections, and we should certainly say that the choice would lie between Louisiana and Texas.

Albert Fendig, Albert Fendig & Co., real estate, Brunswick, Ga.:

New Orleans, being so much nearer the centers of population than any other city, and at a point where over one-half of the population of the United States can reach it within 24 hours by rail, and probably three-fourths of the population of the United States within 36 hours, it makes it without question the only city that is aspiring for the fair that is a logical place for it to be held. It is useless to have the great fairs unless the masses can attend, which would not be the case were the city chosen in the remote sections of the United States. Then, too, New Orleans is handier for the countries to the south of us, people of which will no doubt want to attend.

W. L. Arnold, vice-president the Arnold Company, engineers, constructors, Chicago, Ill.:

We favor New Orleans as the place to hold this exposition on account of its proximity to the Central and South American States, and we believe that the State of Louisiana and the city of New Orleans will do its share when called upon to make this exposition one that will go down in history.

R. B. Sheridan, assistant general manager the Brown Hoisting Machinery Co., Cleveland, O.:

It would seem to us that New Orleans is a very good choice for such a site. Our main reasons for our decision are: Its position with respect to the canal and its position with respect to the rest of the country. We also are heartily in favor of doing everything we can to promote a further industrial progress in the South, and a World's Fair at New Orleans ought to tend largely in increasing business activity in the South. It will certainly bring New Orleans more forcibly to the front, and we heartily approve of the MANUFACTURERS RECORD's standpoint in regard to naming New Orleans as the most suitable location for the celebration.

A. Courchesne, proprietor El Paso Limestone Quarries, El Paso, Tex.:

There should be and there can be no sound argument against the choice of New Orleans as the ideal place for the holding of a great World's Fair commemorating and celebrating the completion and opening of the Panama Canal in 1915. A mere glance at the map shows New Orleans to be, of all the great cities of the United

States, the best located geographically for the celebration of what will undoubtedly be the greatest event of the twentieth century, and after the opening of the canal New Orleans will be the most easily accessible city to all the South American nations, as well as to those of Europe. By all means let the exposition be held in our sunny Southern clime and in the fairest of our Southern cities.

E. V. Burdett, real estate, Garden City, Mo.:

I am decidedly in favor of New Orleans, as it is centrally located for the Southern countries and also for our country, as we have splendid railway facilities, as well as boat service, which will enable anyone to get to that point more pleasantly and with less expense than in the extreme East or West. Another great point in favor of the South as a place for this celebration of one of the most wonderful pieces of engineering and greatest aid to America's shipping industry is that the East and West have both had the advantage of World's Fairs, also the central part of the United States at St. Louis, makes doubly in favor of New Orleans. The development of the South is just as essential as any other part, and the resources are not yet known to the people of other countries.

K. B. Grahn, president Louisville Fire-Brick Works, Highland Park, Ky.:

All the manufacturers of the South, as far as we know, would be in favor of holding the World's Fair, which is to celebrate the completion of the Panama Canal in 1915, at New Orleans.

W. L. Keller, Keller Concrete Machinery Co., Kearney, Neb.:

I would recommend New Orleans over all other cities in competition for the Panama Canal World's Fair. It is more centrally located, and can be more easily reached by manufacturers and the general public and with less expense.

H. F. Strohecker, Macon, Ga.:

New Orleans is nearer to the eastern terminus of the canal than any other large city in the United States which has deep water or is a port of first importance. She is at the mouth of the greatest river in the United States, the Mississippi. The Mississippi and its tributaries drain over one-half of the area of the United States. She is the natural outlet to the commerce of this area, and water transportation is the cheapest and natural means of transfer. The valley of the Mississippi (meaning the territory drained by it and its tributaries) produces the much greater part of all the exports of the United States; all the cotton and cotton products; by far the greatest part of our exports; all the farm products exported, whether crude or prepared; in fact, this territory is the most productive of the United States, and produces everything produced anywhere in our confines. The completion of the canal will give an impetus to the use of waterways in the United States that will soon pour into New Orleans the entire commerce of this territory, while the realization of the scheme for deep water from the Lakes to the Gulf will carry with it much, if not all, the commerce on the lakes which now seeks Eastern ports. The Mississippi basin can feed and sustain a greater population than any other territory of twice the extent in the United States, and the center of population is now in this region, and bids fair to remain there. And I prophesy that the future great city of the United States will be on the Mississippi, possibly just north of Memphis. And further, along the Mississippi the white and yellow races will contend for North America. Transportation for this

great country, the basin of the Mississippi, will be so much cheaper to deep water at New Orleans than at San Francisco that little if any will seek the later place from east of the Rocky Mountains, and very little from west of the Alleghenies will seek Eastern ports. It will flow like the streams of this land into the Gulf at New Orleans. Every great railroad will have to have traffic arrangements to New Orleans or see its carrying trade pass from its hands. Besides this, Tampa, Key West, Apalachicola, Pensacola, Mobile, and even Galveston, will all contribute to New Orleans, owing to her superior shipping facilities. Imports seeking this territory will come to New Orleans, preferring the short railroad haul, after breaking bulk, to the long overland haul from the Pacific coast and consequent increase in costs. All this being true, and it cannot be denied fairly, why should the celebration of the completion of the canal be held at San Francisco, a city out of the beat of the commerce for which the canal is designed, for only the domestic trade between Eastern and Western States will go through San Francisco, and to attempt to force her to the front with an exposition will prove a failure—a fight against the laws of nature. New Orleans is the North American Panama port of entrance and clearance, and should have the honors due her.

E. L. Powell, vice-president American Creosote Works, Inc., New Orleans, La.:

New Orleans is amply able to care for the great crowd that will undoubtedly visit the fair, and her long experience in handling large crowds peculiarly fits her for the work. It is not an unusual thing to have 100,000 to 125,000 visitors during "Mardi Gras," and these visitors have been well and easily taken care of, and have always gone away sufficiently well pleased to come again if possible and to induce their friends to come also. Our climate is excellent. There are many things of interest to entertain a visitor besides the attraction of the fair, and it is peculiarly well situated as far as expense of transportation is concerned. The railroad facilities are excellent. As far as the Pacific Coast is concerned, unless the railroads now going to that section are prepared to abandon all freight traffic they could not possibly handle enough people to make the fair a success. The long, tiresome and expensive journey across the Continent would prevent even the entertaining of the idea of visiting the fair by at least 85 per cent. of those who could afford and would like to take the trip. New Orleans is the best place; in fact, the only place worth considering for the fair.

John G. Kostmayer, real estate, New Orleans, La.:

New Orleans doffs her hat to her far Western sister, for we love and admire the splendid American courage which brought San Francisco out of the chaos of a great cataclysm of nature and rebuilt her firmer and finer than before, and were a great exposition to be proposed celebrating the annexation of the Philippine Islands, New Orleans would be the first to advocate San Francisco as the indisputably logical point for that honor. But for the celebration of the opening of the Panama Canal by a great international exposition, New Orleans asserts her undisputed claim as the logical point. Within 1300 miles, or four days' sail from the Atlantic entrance to that great ditch, which will revolutionize the trade routes of the world, New Orleans is the one city of the Union where such a celebration should be held. San Francisco is 3300 miles from Panama. The Cape Verde Islands, off the west coast of Africa, are nearer to Panama than to San Francisco. A man living in San Francisco, but working on the canal, can go to his home from Colon via New Orleans in

eight days, remain eight days with his family and return to Colon via New Orleans in eight days more. It would take that same man 28 days to go from Panama direct to San Francisco by sea. Within a circle of 1500 miles around New Orleans there are 90,000,000 people in the United States and the tropics who could reach New Orleans in an average of 24 hours. Within a radius of 1800 miles around San Francisco only 17,000,000 could go there in the same time. The exposition belongs to New Orleans by natural selection and logical conclusion, and those of you who have not yet acted upon the endorsement requested by New Orleans I ask to return to your respective cities with these facts and figures in your minds and present them to your organizations for action.

G. E. Carlyle, president and general manager the Carlyle Paving Brick Co., Portsmouth, O.:

Our plant is located on the bank of the Ohio River, with facilities for river transportation. We are very much interested in all the South, and particularly Ohio and Mississippi River points. We have made extensive shipments to these cities as well as other cities in the South, and from our point of view we know of no city that would represent our interests for the Panama World's Fair better than New Orleans. The South cannot enjoy any degree of prosperity without the North feeling the influence, and the North, in a business way, should have a very great interest in the proposed Panama Exposition being held at New Orleans. The nine-foot stage of the Ohio River from Pittsburgh to Cairo is going to carry an immense traffic to and from Southern cities. The mutual exchange of ideas which would be brought about by the New Orleans Exposition would be an incentive to expedite and increase the traffic above referred to and build up all territory tributary to the Ohio and Mississippi valleys. We take pleasure in casting our vote for New Orleans, and regret the delay in doing so.

L. E. Johnson, president Norfolk & Western Railway Co., Norfolk, Va.:

I am in favor of New Orleans as the site of the World's Fair in celebration of the completion of the Panama Canal in 1915, for the reason that it is the central and natural site for such an important event.

I. F. Davis, president Davis Foundry and Machine Works, Rome, Ga.:

The citizens of New Orleans and Louisiana are very enthusiastic over the matter, and they will spare no expense or pains to make the fair a very great success, and we are quite sure that no city in the country would give its visitors such a royal entertainment as New Orleans will on such an occasion. New Orleans is nearer the canal than any other of our important cities, and it could be reached so much easier from all parts of the United States than any other city that is competing for the exposition; besides, it is nearer and easier reached by citizens of Central and South America, the countries we should look after for their business. In fact, it is hard to understand how anyone in the United States, unless they are directly interested, should favor any other city that has been spoken of in preference to New Orleans. It is unquestionably the place for this World's Fair.

Chas. Hyde, Hyde Bros. & Co., iron and steel, Pittsburg, Pa.:

We naturally favor New Orleans as the site for the World's Fair in connection with the Panama Canal in preference to San Francisco, as Pittsburg's business relations with New Orleans are more direct and more extensive. Some of the legislation of your Southern States, however, is calculated to check enterprise in the South rather than to tend to development.

THE STEEL SHEET PILE IN THE SOUTH.

By J. F. SPRINGER.

[Written for the Manufacturers Record.]

There are two distinct kinds of piling—the bearing piling and the sheet pile. The one carries a load. This is its office. The sheet pile, on the other hand, performs the duty of withstanding a horizontal thrust and endures no vertical stress. The two are thus distinct in their engineering application. They have, however, this in common: Both are driven into position. The origin of the sheet pile is probably beyond the reach of any historical inquiry. If the mind reverts to far Eastern lands as the scenes of some of the earliest efforts of civilization, it can scarcely escape the conviction that excavation in the sands and slime of those regions must have required the use of some kind of sheet piling. Perhaps, though, the sheet was not at first

has been found possible to make even the ordinary wooden sheet pile water-tight to some degree, so that it is now much used to withstand not merely the encroachments of solid materials, but those of the more elusive substance. But it is often difficult to make wooden piling sufficiently water-tight to perform its proper service. It has been found possible, however, to install metallic sheeting with such perfect joints that water is very perfectly restrained.

The first metallic sheeting put to any considerable use was of cast iron. In the first half of the nineteenth century extensive installations in permanent works were made in England. Other extensive applications have recently been made by Brit-

ish engineers in barrage construction on the River Nile. In all this work, however, the driving was no doubt of a rather gentle character. Cast-iron sheeting has proven to be a pretty good article when once in position, as witness certain harbor construction in England. But the engineer has to face the question of getting his sheet piling into place. Here is where cast iron proves a very questionable material. If the pile is to suffer hard driving it will have to be made enormously heavy, or the percentage of broken piles would be excessive. A similar difficulty arises in connection with wooden sheeting. When the wooden pile is protected by a suitable metal shoe, it is capable of penetrating pretty difficult soils. But the engineer has often to deal with strata where the resistance becomes enormous; the wooden pile splinters and refuses to penetrate further. A notable instance of the failure of wooden sheet

piles to endure heavy driving occurred in an extensive engineering undertaking in England. It was at first expected to employ in a certain wall 1390 linear feet of wooden sheet piling. Because of the enormous difficulty or impossibility of driving this on a portion of the site of the sea barrier under construction it was found advisable to replace 540 feet by sheeting of another description that could be successfully driven. The wooden piles were large timbers 12x12 inches in transverse section, and could presumably withstand heavy driving. This was found, however, not to be the case. Steel is the material which was able to endure the tremendous ordeal. Because of the enormous strength, a steel sheet pile can be made very strong and very thin. The thinness, of course, reduces the total amount of resistance to penetration. It seems impossible to select a thickness of wood such that the pile will

of 13 pounds per square inch. But steel sheeting can be formed so precisely and driven so accurately that a strong seal can readily be made. The first practical application of steel sheeting in the United States was made in the construction of the piers for the Randolph street bridge in Chicago. Here a depth of water of about 30 feet had to be withstood. Not only were the joints subjected to pressures ranging from nothing to 13 pounds per square inch, but the whole surface as well. Wooden bracing was used inside the steel wall, but all the same the pressure had to be endured.

A very important question which arises is, What will the probable life of steel sheeting be? To this question no incontestable answer can well be given. Corrosive action depends, so it would appear, upon the simultaneous exposure to water and oxygen. Steel sheeting exposed to rain



FIG. 4.—PILING CORE, FORT ST. PHILIP.

driven, but only installed as excavation went on. Perhaps, too, it was originally put in horizontally. However these things may be, it can scarcely be doubted that someone would soon see that by driving down the timbers in advance of the removal of the soil a great advantage would be gained, in that the workmen would be protected and the walls of the excavation itself preserved. Wales and struts might have to be used as the excavation went on. But the great point would be covered that no apprehension of a cave-in at the digging point would have to be entertained.

However, whether the sheet pile is an enormously ancient thing or whether it is comparatively modern, its advantages are too great and too conspicuous to permit it to stand in the background today. Sheet piling is everywhere used—everywhere that engineering construction is going on in more or less treacherous soils. Further, it

ish engineers in barrage construction on the River Nile. In all this work, however, the driving was no doubt of a rather gentle character. Cast-iron sheeting has proven to be a pretty good article when once in position, as witness certain harbor construction in England. But the engineer has to face the question of getting his sheet piling into place. Here is where cast iron proves a very questionable material. If the pile is to suffer hard driving it will have to be made enormously heavy, or the percentage of broken piles would be excessive. A similar difficulty arises in connection with wooden sheeting. When the wooden pile is protected by a suitable metal shoe, it is capable of penetrating pretty difficult soils. But the engineer has often to deal with strata where the resistance becomes enormous; the wooden pile splinters and refuses to penetrate further. A notable instance of the failure of wooden sheet



FIG. 5.—TURN OF WALL, FORT ST. PHILIP.

have sufficient strength to endure the violence of driving corresponding to its cross-section when very difficult soils have to be penetrated. Steel is incomparably better. In fact, it is no doubt true that the selection of steel sheeting in place of wooden turns, in very many cases, largely upon the certainty with which it can be driven with success in difficult situations. But the steel sheet pile shares with the one of cast iron the possibility of construction permitting a very tight joint and consequent high resistance to water. Those who have given the matter no consideration may not be aware how rapidly the necessary tightness of the joint increases as one goes down below the water line. At a depth of 2½ feet the pressure is only a little over 1 pound per square inch; at 5 feet it is 2 pounds strong; at 10 feet it is 4½ pounds, and so on. At 30 feet the water insists on entrance by pressing with the intensity

and the atmosphere would, if unprotected, soon become worthless. Below the water line it becomes a question as to the air particles held in the water. Near the surface, because of the coincident presence of such particles and water, there would likewise be corrosion, unless protective measures are adopted. At some distance down, however—the distance no doubt ranging considerably with local conditions—there are few or no air particles, so that we may reasonably expect a long life even if the steel is bare. Of course, the presence of deleterious substances dissolved in the water may have to be taken into consideration. The Southern engineer may, perhaps, have to pay strict attention to this point occasionally.

Steel sheet piling has come into considerable use as a retaining wall during the construction of sewers and the like. Such piles are especially useful if unstable dry

sand has to be encountered. The steel sheeting may be driven along each side of the trench site to the full depth required for the excavation. The intervening soil may then be removed without difficulty. The men need be in no danger, and the work itself is kept intact. Sometimes in trench work the steel sheeting may be quite thin and the driving blows quite light. So that the handling of the piles and the driving of them become a small matter. Thus at Norfolk, Va., steel sheet piling weighing only 11 pounds per longitudinal foot was used. Except at the joints

to lay bare a certain site and provide access to it. At the point of outfall it was necessary to prevent not merely the entrance of solid matter, but also of water. The steel sheeting was driven to form a neat and thin wall of metal, thus protecting the site. At Irvine, Ky., on the Kentucky River, steel sheet piling was employed in cofferdam construction at Lock No. 12. The steel piles here were in 20-foot lengths, and weighed 35 pounds per longitudinal foot. They were driven about half their length into the sand, clay and gravel. A steam hammer weighing 2500

length. Between joints the steel sheeting was one-half inch thick. Each pile interlocked securely with its neighbors, so that there was mutual support. These joints are of such a character that some angular deviation may be made in the alignment. The piling in the City of Mexico is to remain permanently in position.

The employment of steel sheet piles beneath dams to cut off the percolation or seepage of water is a most important application. At one time it was expected to

could scarcely lead to any appreciable enlargement of crevices. The question of corrosion seems to be the crucial one. And this must be a different question at different locations. At a depth where the water contains only a negligible amount of entrapped air it may very well be that steel sheeting would have an indefinite life. The question may also turn somewhat on the character of the metal itself. In some situations it would no doubt be possible to enclose the steel wall in a covering of

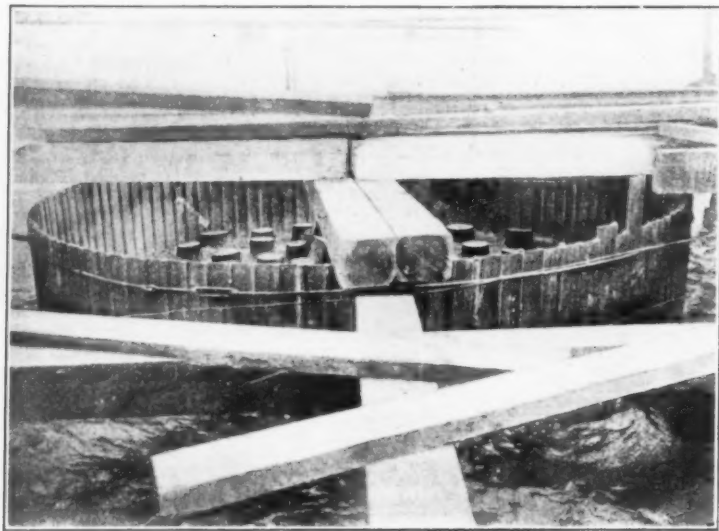


FIG. 1—SHELL FOR SWING BRIDGE PIER, OCEAN CITY, MD.

the thickness of actual metal was small, so that it is not difficult to understand that a 200-pound gas hammer was found sufficient as a driving instrument. The piling was used in connection with the construction of the Jamestown boulevard and Colonial avenue. Further, these piles were withdrawn by the use of a tripod and horse when they had served their purpose in one situation and used again at another point. In fact, such thin sheeting was used 35 times. We have in this example a striking illustration of the notable features about steel sheeting. It can in many cases be used again and again. It is thus frequently sufficient to invest in a small amount, even though the job itself be a

pounds was employed for the driving. Twenty piles per day were about the maximum limit. That the driving was rather difficult is indicated also by the long drop—18 to 20 feet—of the hammer. The withdrawal of the piles when they had served their purpose, was, however, rather easy. A cableway was employed for this duty.

In foundation construction at Lock and Dam No. 1, on Trinity River, Elam, Tex., steel piling of the same weight was employed to prevent the sliding of the earthen embankment. In such cases the horizontal thrust may be very considerable. Thus the solid material may run up to some height and the thrust may be delivered be-

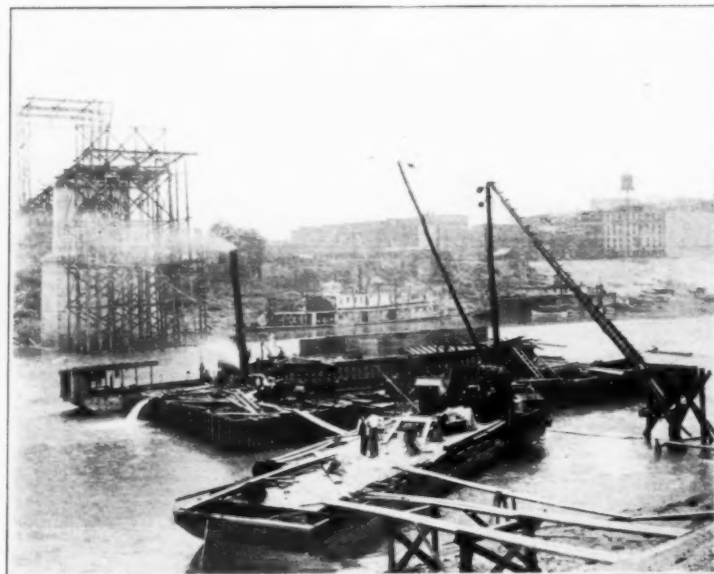


FIG. 2—COFFERDAM AT NASHVILLE, TENN.

use a steel diaphragm beneath the great Gatun Dam at the Panama Canal. This has been deemed unnecessary in this case, and the work of putting in sheet piles has been stopped. Of course, a serious question relates to the preservation of the integrity of the wall of steel in so vital and inaccessible a position as that occupied by the curtain wall of a dam. There is, perhaps, little or no conclusive evidence available on the question.

A very considerable question comes in in connection with the use of such a cut-off beneath the body of a levee. There are but few cases, if any, where a core wall of piling has been employed to prevent the undermining of the whole mass. If steel

concrete or cement grout. Intelligently and adequately done, this would probably solve the question of corrosion. It must, however, be said that such curtain walls should be constructed of piling having a strong and reliable interlock. There is then a considerable area which unites to resist any bulging action. In construction, precautions should be taken, if necessary, to provide against such thrusts. A concrete or grout covering would probably suffer under severe bending strains. All the same, the interlock may help at a critical moment and be the means of preventing sudden disaster.

In Fig. 1 we have a design suited to levee construction. Here, it will be seen,

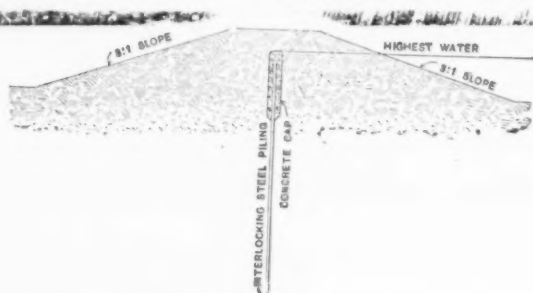


FIG. 1—DESIGNED FOR LEVEE CONSTRUCTION.

considerable one. Here at Norfolk the trench was nearly a mile and a half long. Presumably double that length of retaining wall had to be constructed, so that it must have been a relief to the contractors to be able to use the sheeting again and again. It is said that the saving amounted to "about 40 per cent. as compared with the cost of wooden sheeting." An intercepting sewer more than two miles in length was constructed at Evansville, Ind., on the Ohio River, by the repeated use of the same type of steel sheet piles.

At Louisville, Ky., the steel sheet pile was employed on a sewer trench and also in the cofferdams at the outlet. Perhaps the use of steel sheeting in such construction is one of the more important engineering advances of the last decade. A cofferdam is constructed to keep the water out—

cause of the softness of the stratum at the level of the piles or because of inclined planes of cleavage. It may often be necessary to brace any kind of piling. One method is to use wales on the front and connect these to "dead men" placed horizontally or vertically back within the pile of material. But steel sheeting, if the several piles mutually interlock, may often be relied on to withstand considerable thrusts without assistance. This is especially true if the steel wall forms a cylindrical shell. If the circle is large, however, its form will give but little support. At the City of Mexico, Mex., very heavy steel sheet piles were employed in forming a retaining wall enclosing the site of the foundation for the Independent Monument. These piles weighed 40 pounds per longitudinal foot, and were 25 feet in

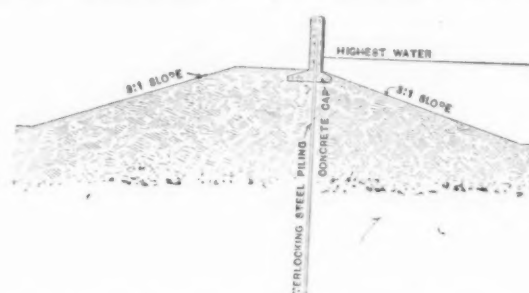


FIG. 2—FORT ST. PHILIP SEAWALL CONSTRUCTION.

sheeting has a sufficiently long life in such a situation, then it would appear that levee builders had here a means of maintaining at a reasonable expenditure the integrity of their structure. No doubt it is frequently the undermining action of water at a depth, and so under pressure, that is the controlling factor in the failure of many levees. If there is no corrosive action it would not seem to be very important whether the steel wall be fully watertight. The percolation of tiny streams

the piling is driven down to a considerable depth. The bottom of the steel wall may be carried far below the base of the levee itself. This is so easily done that the procedure would seem to recommend itself to engineers. Piling may be had in great lengths—up to 60 or 70 feet. It is not necessary to excavate in order to drive it to position. If the interlock is of approved form and of sufficient strength, no apprehension need be entertained as to the integrity of the steel wall down out of sight. If it seems necessary, the sheeting may usually be rendered water-tight by the use of wooden strips driven down in the interlock space or by the use of cement grout. The engineer must settle for the local conditions at what depth corrosion is to be feared. To this depth excavation should be made, forming a kind of trench

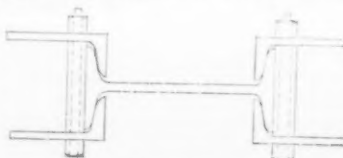


FIG. 3—JACKSON PILING.

with the steel wall running along the center. A concrete cap may now be placed, so as to envelop the upper part of the wall and extend down to the point where corrosion is not to be feared. The engineer will see to it that this protective envelope of concrete is itself water-tight. To get a water-tight concrete is largely a matter of using enough cement, and of a sufficiently high quality. If the core wall is carried up to the level of highest water, as indi-

of steel sheeting to circular work, an example of which occurred in the construction of a pier for a swing bridge at Ocean City, Md., for the Baltimore, Chesapeake & Atlantic Railway. This pier has a diameter of $18\frac{1}{2}$ feet. Six-inch 11-pound piling was driven in the form of a circle through sand and mud. The 25-foot lengths were put down by a one-ton drop hammer. Wooden strips were employed to seal the joints. Bearing piles were

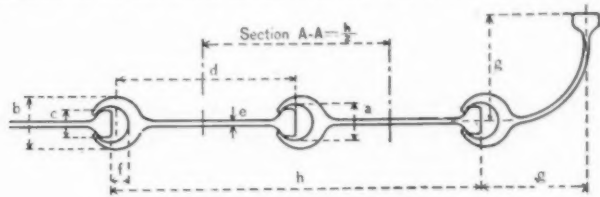


FIG. 7.—U. S. STEEL SHEET PILING.

cated in the figure, then we shall have a perfectly impervious levee. No burrowing animal can dig a hole below the water line that will reach from one side to the other and thus create a menace to the structure. Even if there is some leakage, one need scarcely fear that it may rapidly enlarge from the action of the water. The piling itself may be coated with some waterproof substance. The example of the United States Government in the construction of the core wall at Fort St. Philip is probably worthy of the study of engineers having to deal with levee construction.

Circular construction has already been referred to. There are two methods of

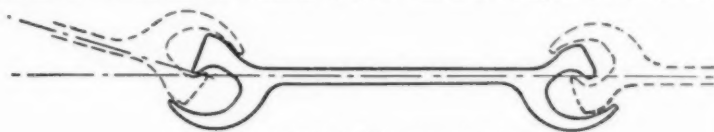


FIG. 8.—LACKAWANNA STEEL PILE.

curving the alignment. The deviation may be made at the joint if the character of the interlock permits. Even if the interlock is rigid, however, there is the second method of curving the web itself. The United States steel sheet piling of the Carnegie Steel Co. has an interlock permitting considerable deviation. The very heavy sheeting, 12 inches wide and weighing 40 pounds to the longitudinal foot, may be driven to form a circle of seven feet diameter. The lightest weight, 6 inches wide and weighing 11 pounds per foot, can be made to form a circle $2\frac{1}{2}$ feet in diameter. This flexibility of the sheeting was

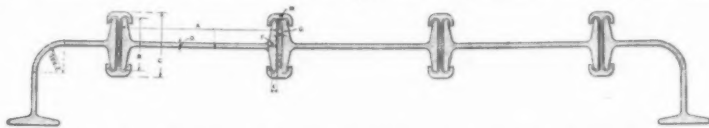


FIG. 9.—JONES & LAUGHLIN SHEET PILING IN SECTIONS.

taken advantage of in the construction of a pump well at Tiger Bay, Fla. There is an ordinary brick wall of nearly 10 feet inside diameter extending down 6 feet. Beginning at a depth of 5 feet, a circular wall of steel sheeting 8 feet $3\frac{1}{2}$ inches in diameter extends 12 feet down. At the one-foot overlap there is a joint made with the brick wall. There is a third and last section of lining 18 feet long and having a diameter of 6 feet $5\frac{1}{2}$ inches. This overlaps the other steel shell for 2 feet, where a suitable joint is made. A pump is arranged at the bottom. The foot of the innermost wall extends 2 feet below the water line. Each of the steel shells was assembled before driving began. A half-ton hammer dropping 12 feet effected the placing. The assembling and driving cost \$66. There is a space within the interlocks of this type of steel sheeting. This may be utilized to seal it against water. In the present case strips of cypress were driven in to form the seal.

There is another interesting application

of a wooden crib with a puddle space 16 inches wide. But the contractors could not pump it out. Wooden sheeting three inches thick was then driven in a double row all round on the outside. But the cofferdam could not be unwatered. The next attempt was made by bringing into service a very substantial steel piling with strong interlocks of the form identified with the name of George Jackson, Inc., Chicago. A few sacks of earth placed at a number of points on the outside enabled the unwatering to be done and the concrete for the pier itself to be put in place. This piling has its alternate sections of a box-like form.

In Fig. 2 we have a view of the Nashville cofferdam. The view shows the work after the laying of the concrete was well under way or nearing completion, perhaps. In some construction, though it was not done here, the piling may be left in. In such cases the cofferdam will ordinarily be of the same form and size, in plan, as the pier itself, so that it may be made the mold for the concrete. Whatever bracing may be needed to withstand the pressure of the external water may be removed by instalments as the concrete is laid. At Black Rock harbor, near Buffalo, the United States Government is constructing a large lock inside of a cofferdam constructed of steel sheet piling. The piling

here is not to remain. There was constructed a double wall of sheeting, the two walls being 10 or 12 yards apart. At intervals these were connected by transverse partitions of sheet piles, so that the whole became a series of great compartments. These were pumped out and clay filled in, with the object of making a thoroughly strong and water-tight wall. The depth of water here is pretty considerable, and it was necessary to have a large interior

space free from bracing. In pier construction, such as that shown in the figure, where the concrete forms simply a solid mass filling the interior, a double steel wall would appear rather unnecessary, as the bracing could be removed, as stated above, in instalments. Engineers and contractors should remember that George Jackson used a single wall of steel sheeting in 30 feet of water at Chicago in 1901.

The Government has employed the steel sheet pile in the construction of the seawall at Fort St. Philip, Louisiana. (See Figs. 3, 4 and 5.) The fort is situated on

was necessary to cut the tops off even in order to present a good appearance. This may be done by a steel cutting saw or by the use of the oxy-acetylene blow pipe with cutting attachment.

It would seem that the steel sheet pile is destined to play a not unimportant part in engineering construction in the South. There are so many marine and fluvial localities where, on the one hand, the encroach-

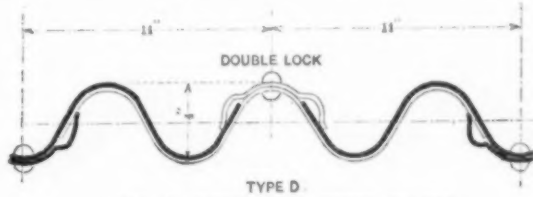


FIG. 10.—WEMLINGER STEEL PILING.

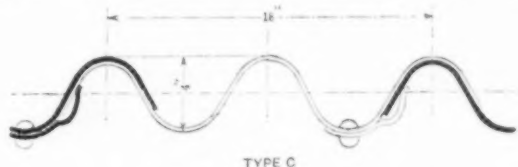


FIG. 11.—WEMLINGER STEEL PILING.

ments of sand are to be withstood, and where, on the other, the intermittent and continued action of water is to be guarded against. There is so much construction to be done which requires the penetration and excavation of treacherous soils. There are, in short, so many opportunities for the application of the steel sheet pile that its extended use in the South is sure to be witnessed in the next few years.

The earliest form of steel sheet piling is one of those furnished by the Geo. W. Jackson concern. (See Fig. 6.) Two duplicate channel bars are placed with their concave sides facing each other and the edges of the flanges only a little distance apart. They are held in this position by means of bolts and distance pieces. This box-like section permits the flange of an I-beam to be introduced within it. The interlock thus formed is strong and secure. The only method of separation is by vertical withdrawal. The United States sheet pile of the Carnegie Steel Co. differs markedly from this pioneer form. (See Fig. 7.) All the sections are alike. There are no bolts or rivets. Each piece is a rolled shape with a central web. On one side this is simply thickened. On the other the form is much the same as would be obtained by bending the two halves of the flange of an I-beam to form a circle. Only they do not come quite together. The thickened side of one pile is introduced within the clasp of the two parts of the "flange" and the interlock is made. The rolled form made by the Lackawanna Steel Co. provides a clasp at each side. But the two parts of each clasp differ from each other. (See Fig. 8.) The interlock is formed by reversing one pile and passing the blunter part of one clasp within another. In both these forms a deviation in alignment can be made at each joint. In the Jones & Laughlin Company's form we have two different sections alternating with each other. (See Fig. 9.) However, the office of one is not so much to occupy space as to bind the adjacent piles together. The pile elements proper are I-beams. The flat surfaces of the flanges of two I-beams are brought together with a strip of steel between. This intermediate piece is formed so that there is metal bent round to clasp the flanges at their edges. Two I-beams are thus securely held together by the intermediate element. There are no rivets or bolts. The pile elements proper are true I-beams, and can be used as such. This may at times be an important consideration to the contractor in the case of tem-

peratures. At Dunnellon, Fla., two rows of steel sheet piling were driven from three to seven feet into sandstone. These rows were 126 feet in length and 40 feet apart, and formed the side walls of a loading slip. It

porary work, as he is able to dispose of all these elements afterwards as second-hand standard beams. A similar observation applies to the Jackson piling. The channels are commercial channels and the I-beams are commercial I-beams. The channels are, it is true, pierced with a number of bolt holes. The sheet piles of the Wemlinger Steel Piling Co. are of quite a different description from the foregoing. (See Figs. 10 and 11.) Sheet steel is given large corrugations extending longitudinally. In one form a steel strip is riveted along the crest of a central corrugation, so that the adjacent piles fit into it on each side. This arrangement results in the assembled wall of sheeting having a double thickness of metal. Another form of this corrugated piling has the strip arranged along near one side. It engages but one adjacent pile. In this type the large part of the wall is of a single thickness of metal. This variety of piling can be obtained of very light weight, so light, indeed, that the pieces can be handled by one man, and he can also accomplish the driving with a hand maul. The corrugations of the Wemlinger pilings have the effect of greatly stiffening them, so that a considerable stiffness can be obtained with comparatively thin metal.

The steel sheet pile is a comparatively new appliance available for the service of the engineer and contractor, but already it has been pretty thoroughly demonstrated to be a very effective one, especially in certain lines of application. New uses will doubtless be found or demonstrated to be successful from day to day as practical men join in the development of the field.

Texas Road Map.

The Texas Commercial Secretaries' Association has prepared a road map showing the number of miles of public highway in each county, the number of miles improved, the annual expenditure on public roads other than bond issue and the bonds issued during the past 12 months.

The reports show there are 140,101 miles of public highway in actual use in the State; 4652 miles of improved public highways. The State spends \$3,235,468 annually by regular taxation in construction and maintaining our public highways and \$4,015,000 of bonds were issued during the past year. The people are preparing to spend \$25,000,000 on our public highways in 1911. The average cost of public highways is \$13.05. Interesting tables bringing out distinctive and instructive features of road-building are also shown. Tarrant county is the banner county in miles of improved public highways, and Ellis county leads in bond issue, having issued \$805,000 bonds within the past year. Hill county has the largest mileage of public highway, having 3500 miles. Harris county spends the largest amount by annual taxation per annum, the amount being \$250,000. El Paso county has spent the greatest amount per mile, \$450 per mile. Collin county has the largest mileage of public highways per square mile of area, 3.6. These maps are for free distribution, and can be secured on application to the Texas Commercial Secretaries' Association at Fort Worth.

A \$350,000 Stove Plant.

The Charter Oak Stove & Range Co. of St. Louis will add largely to its facilities for manufacturing stoves. It has awarded contract to Edward Ward of St. Louis for erecting mill and fireproof construction buildings, covering eight acres of land, to cost \$200,000, and will install machinery to cost \$150,000 for a daily capacity of 250 ranges and furnaces. Klipstein & Rathman of St. Louis prepared the plans.

GOOD ROADS

WEEK'S HIGHWAY RECORD.

Progress in Southern Road and Street Improvement.

[Full details of highway undertakings are given in the Construction Department.]

Bonds to Be Voted.

West Palm Beach, Fla.—City votes November 6 for street improvements.

Contracts Awarded.

Galveston, Tex.—City awarded contract to pave Tremont street; cost about \$1500.

Greenville, S. C.—Contractors have begun paving North Main St. with vitrified brick; 1,250,000 bricks required.

Little Rock, Ark.—City awarded contract at \$40,000 to pave 11 blocks on each of two streets with asphalt concrete.

Little Rock, Ark.—City awarded contract to pave section of Main street with wooden blocks; cost \$50,000.

Parkersburg, W. Va.—City awarded contract at \$6598.50 to pave section of Market street.

Petersburg, Va.—City awarded contract for laying 10,000 yards of cement sidewalks.

Seguin, Tex.—City awarded contract for paving about 25,000 feet of cement sidewalks.

Contracts to Be Awarded.

Asheville, N. C.—City will lay 1000 yards cement sidewalks.

Birmingham, Ala.—City opened bids November 2 for certain grading, macadamizing, guttering, etc.

Bristol, Tenn.—Board of Trade will extend Bristol-Blountville road to Kingsport, Tenn., a distance of eight miles.

Cullman, Ala.—City contemplates constructing several miles of sidewalks.

Dallas, Tex.—City ordered paving of certain sections of Rawlings and Coke streets with Jacksboro rock.

Dallas, Tex.—City ordered rock paving on Rawlings and Coke streets, and for constructing concrete curb and gutter.

Dalton, Ga.—City will construct approximately 28,000 square yards of street paving.

Enid, Okla.—City opened bids November 3 to improve section of Buchanan street; also opened bids November 4 for cement sidewalks in Sawyers University Place Addition and replat University Place Addition.

Fernandina, Fla.—City will pave certain section of Center street with vitrified brick.

Galveston, Tex.—Galveston county opens bids November 14 for seawall boulevard improvement; about 9300 square yards of concrete sidewalk, 5400 linear feet of concrete curbing and 5500 linear feet of 10-inch retaining curb.

Leesburg, Fla.—City opened bids November 4 to construct 7000 linear feet of cement sidewalks.

Montgomery, Ala.—City adopted ordinance providing for paving certain section of Jeff Davis avenue with brick, asphalt, bitulithic, Blome granitoid block, mineral rubber, wood block, Hassam's granite block or Hassam's compressed concrete.

Nashville, Tenn.—Davidson county opens bids to grade 6226-foot road from Lickton, in twenty-second road district, to Wilkerson road.

Norfolk, Va.—City and local traction company will expend about \$27,000 to repave on Olney road and Botetourt street; vitrified brick on concrete base.

Norfolk, Va.—City will probably appropriate \$14,500 for paving a portion of Bank street with smooth material.

Norfolk, Va.—Sixth and Seventh Wards are considering paving of County street.

Oklahoma City, Okla.—City will grade five streets and three avenues, etc.

Oklahoma City, Okla.—City will construct numerous sidewalks and pave with asphalt, grade, etc., one street and three avenues.

Temple, Tex.—City will have plans and specifications prepared for paving three-quarters of a mile on North Main street and French avenue.

AMERICAN ROAD BUILDERS.

Plans for Annual Convention of the Association.

The seventh annual convention of the American Road Builders' Association will be held at Indianapolis, Ind., December 6-9. In connection therewith will be held a congress of road builders and a "good-roads show."

The sessions of the convention and congress will be devoted to the presentation of a large number of technical papers on the subjects of road and pavement construction and maintenance by leading highway officials, discussions of the papers and of matters pertaining to the work of highway improvement, and to addresses by prominent men interested in and identified with the various phases of the work. The program is now being prepared and will be announced later. It will comprise papers and addresses covering every phase of road and street improvement and treating the subject from the viewpoint of each of the many classes to which it is of moment.

The membership of the American Road Builders' Association includes the foremost road-making and street-paving authorities of the United States and Canada—men occupying the chief administrative and engineering positions in the highway departments of States, counties, cities and towns. The experience of these men embraces work with all the materials and methods used in the construction of country roads and city streets and the building of highways under all the varying conditions encountered throughout the country. The opportunities afforded by the conventions of the association to learn from these men, both through the papers prepared and presented by them and by personal meeting with them renders the annual convention of the American Road Builders' Association the chief event of the year in road-building circles.

Following the custom inaugurated last year at the sixth annual convention at Columbus, O., the exhibition of materials and machinery will form an important feature of the convention. Ample exhibition space has been obtained in German House and the grounds connected with it, thus bringing the meetings and the exhibits together and facilitating attendance upon both without the loss of time. The exhibits will include the various materials and the most improved machinery and appliances for road making and street paving. The greater number of exhibits will be shown in the German House, while the larger and heavier machinery will be displayed in the adjacent grounds.

The meetings and exhibits will be open to the public, and a general invitation is extended to everyone interested in any branch of highway work. The headquarters of the Association are at 150 Nassau street, New York city.

An \$82,000 Road Contract.

Fort Bend County Commissioners have awarded contract for the construction of the proposed shell road from Richmond, Tex., to below Missouri City, where the road will join the Harris county line. This contract amounts to \$81,754.25.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

FRISCO'S ANNUAL REPORT.

Gross Earnings Exhibit a Large Increase, But Expenses Gained More.

The fourteenth annual report of the St. Louis & San Francisco Railroad Co., which covers the fiscal year ended June 30, 1910, shows average length of lines operated, 5072 miles; total transportation revenue \$40,889,791, increase as compared with the previous year \$3,366,846; total operating revenue \$41,165,939, increase \$3,408,953; total operating expenses \$28,676,842, increase \$3,916,751; net operating revenue \$12,489,097, decrease \$507,797; operating income after the payment of taxes \$11,030,911, decrease \$433,835; total income \$13,331,339, increase \$411,568; balance after the payment of interest, rentals, etc., \$1,121,959, decrease \$392,417; surplus after the payment of dividends, and carried to the credit of profit and loss, \$922,217, decrease \$392,417.

The mileage and results of operation of the Orange & Northwestern Railroad and of the Beaumont, Sour Lake & Western Railway, which were included in the St. Louis & San Francisco's report for 1909, are not included in the foregoing comparison. Those roads were during the past year operated separately, forming parts of the New Orleans, Texas & Mexico Railroad. This latter extends from New Orleans, La., to Brownsville, Tex., on the Mexican border, and owns a half-interest in the bridge over the Rio Grande to Matamoras, Mex., connecting there with the National Railways of Mexico. It is expected that a profitable interchange of traffic with the Mexican lines will result. The St. Louis & San Francisco Railroad Co. owns all of its capital stock excepting directors' shares.

The total assets of the St. Louis & San Francisco Railroad Co. are \$355,642,599, increase \$36,321,402. The total franchises and property are included, \$214,207,736. Adding to that the property of the line from Kansas City to Birmingham, the stock of the Chicago & Eastern Railroad Co. and the franchises and property of auxiliary companies makes a total of \$314,618,803 of the total assets.

The company bought equipment during the year as follows: Fifty locomotives, 2150 steel freight cars, 71 steel passenger train cars and 6 pieces of service equipment consisting of 3 wrecking cranes and 3 hoists. All this equipment was purchased under trust agreements, but there were also bought for cash 100 commercial ice cars. All of this equipment was received by June 30 excepting 17 passenger train cars.

The company owns 947 locomotives, 579 passenger train cars, 27,890 freight train cars and 2692 service cars; total number of cars, 31,170.

A cut-off five and one-half miles long was built during the year between Marion and Hulbert, Ark., to connect the Frisco tracks with the Rock Island at Hulbert. The effect of this improvement materially facilitates the transfer of freight between the terminal yards of these two roads, relieving the situation at Memphis. To provide for this interchange of business extensive yards were built at Marion.

Another material improvement has been effected by an arrangement with the Houston & Texas Central Railroad and other Southern Pacific lines for handling freight and passengers via Dallas, Sherman and Fort Worth, and also via Houston, Tex. This obviates the necessity of expensive

construction through a territory already well occupied by north and south railroads, and largely serves the purpose of the company by giving it a connecting line between its properties north of the Red River and those in Southern Texas.

In the way of betterments the company is making a substantial improvement by putting in its track a large number of ties treated with creosote preservative. More than 3,000,000 such ties have been put in since late in 1907, at a cost for treatment and handling of more than \$1,000,000, which expense is borne by the maintenance charges. As the life of these ties is estimated at 15 years or more, or about two and a half times the average life of untreated railroad ties, the reduction of maintenance charges for tie renewals will not be noticeable for several years. The company has installed automatic electric block signals, and has them in use on 325 miles of line, while on 404 miles additional they are being installed, and many of these will be in use for fall and winter.

There were 320 new industries established on the company's lines during the year at a cost of well-nigh \$6,000,000 and employing 8400 men.

The coal miners' strike, says President B. L. Winchell, which began on April 1, affecting mines in Missouri, Arkansas, Oklahoma and Kansas, caused the company, it is estimated, a probable loss in actual net earnings of not less than \$1,000,000 in the period from April 1 to June 30. This strike, as may be readily understood, materially increased the cost of transportation.

The Chicago & Eastern Illinois Railroad, an affiliated line of the Frisco, reports for the year ended June 30 total revenue from transportation \$11,689,594, increase as compared with the previous year \$1,498,295; total operating revenue \$11,750,355, increase \$1,480,736; total operating expenses \$7,953,983, increase \$1,019,450; net operating revenue \$3,796,371, increase \$461,286; operating income after the payment of taxes \$3,434,247, increase \$373,276; total income \$4,176,869, increase \$530,295; balance after the payment of interest, rentals, etc., \$1,175,790, increase \$480,619; balance transferred to profit and loss after the payment of dividends \$68,524, increase \$20,972. The total assets of the company are \$75,777,817, including the road and equipment at \$57,819,089, which, together with other property, makes the total property investments \$59,129,873.

President Winchell says that if the average passenger and freight rates received during 1900 had been applied to the traffic of this year the revenue of the company would have been larger by \$1,295,988, or, if the 1907 rates had prevailed, the increase would have been \$1,001,143.

The Evansville & Terre Haute Railroad, another Frisco line, reports for the year ended June 30 total transportation revenue \$2,454,757, increase as compared with the previous year \$379,725; total operating revenue \$2,471,175, increase \$377,178; total operating expenses \$1,522,945, increase \$200,980; net operating revenue \$948,230, increase \$176,197; operating income after the payment of taxes \$828,270, increase \$166,379; total income \$986,872, increase \$208,997; surplus after the payment of interest and rentals \$389,682, increase \$214,566. The total assets of the company are \$17,627,965, including the road and equipment at \$16,065,819.

Pennsylvania Improvements.

An officer of the Pennsylvania Railroad denies the report, which was recently current, that it contemplated building another reaching nearly \$500,000. Heavier rail put tunnel in Baltimore. The company is

proceeding with the erection of the new Union Station in Baltimore, and it will be under roof soon. At the same time the yards at Union Station are being improved.

The other improvements which the company has under way at Baltimore include the enlargement of the yard at Mt. Vernon, about a mile north of Union Station, and the building of a roundhouse, powerhouse and machine shop at Bayview to take care of the work that has hitherto been done at Mt. Vernon. When the Bayview and Mt. Vernon improvements have been completed freight will no longer be handled at the Union Station yards.

ROCK ISLAND'S GROWTH.

Over \$5,000,000 Gain in Gross Revenue—Extensive Betterments to the Lines.

The Chicago, Rock Island & Pacific Railway Co. has issued its thirtieth annual report, covering the fiscal year ended June 30, 1910. Average mileage operated, 8043 miles. The total transportation revenue was \$65,747,116, increase as compared with the previous year \$4,928,642; total operating revenue \$66,220,578, increase \$5,035,691; operating expenses \$48,069,368, increase \$5,555,873; net operating revenue \$18,151,210, decrease \$520,181; operating income after the payment of taxes \$15,274,509, decrease \$1,126,017; total income \$15,497,741, decrease \$1,114,256; balance of income after the payment of interest, rentals, etc., \$4,747,881, decrease \$1,418,349; surplus after the payment of dividends and carried to the credit of profit and loss \$1,004,699, decrease \$1,231,602; total balance to the credit of profit and loss \$17,292,815. The total assets of the company are \$342,853,143, increase \$33,876,502. The total cost of road and equipment is included in this at \$280,951,792, which, with other property, makes the total property investment \$297,223,043. During the year the funded debt increased \$15,682,000 and equipment notes increased \$10,795,000, making a total increase of \$26,477,000.

Concerning the construction under way the report says that the line between Amarillo, Tex., and Tucumcari, N. M., has been completed to the latter point, connecting there with the main line to the southwest and making, it is said, the shortest route between Memphis, Tenn., and Southern California via New Mexico and Arizona. The entire line was placed in operation on May 9 last. It is laid with 60, 65 and 70-pound steel rails on white-oak ties. The distance from Memphis to Tucumcari is 873 $\frac{1}{4}$ miles.

New equipment was purchased during the year as follows: 184 locomotives, 5 passenger motor cars, 81 steel passenger train cars, 7550 freight train cars and 7 service cars, of which 50 locomotives, 1 passenger motor car and 3550 freight train cars were mentioned in last year's report. There were ordered built at the company's shops 4 switching locomotives and 1 service car. There were received and placed in use 86 locomotives, 97 steel passenger train cars, 3 passenger motor cars, 3741 freight train cars and 6 service cars. There are to be delivered by December 31 this year 104 locomotives, 73 steel passenger train cars, 10 horse cars, 2 passenger motor cars, 3869 freight train cars and 2 service cars, excepting that 4 mail cars are not due until February. The company now owns 1486 locomotives, 984 passenger train cars, 39,380 freight cars and 3814 company service cars, making a total of 44,178 cars. There were located on the lines of the company during the year 193 new industries, at an estimated cost of nearly \$15,000,000. They will employ over 8700 men, and are expected to create a yearly movement of 53,000 carloads of revenue freight. There were 11 side-tracks built to coal

mines and 88 to private industries; also 2 mine tracks and 33 tracks to other industries were extended.

The expenditures for betterments include the installation of automatic block signals on 388 miles of line at various points at a cost of \$430,795, making the total expenditure for block signals up to June 30 \$968,192 on a total of 968 miles. Expenditures for the telephone system of train dispatching included the installation of equipment on 1146 miles of lines, making a total up to June 30 of 1602 miles equipped with telephones, at a total cost of \$162,557. There was a large expenditure made for ballast, this item alone reaching nearly \$500,000. Heavier rail put in track cost nearly \$200,000. Nearly \$350,000 was spent for station building and fixtures. About \$150,000 was spent on bridges, trestles and culverts. Nearly \$200,000 went for widening cuts and fills.

The expenditures for maintenance as a whole were larger than for preceding years. More than \$900,000 went for the building of additional and improved terminal facilities, these figures covering new facilities as well as the completion of work previously reported. The report is signed by President H. U. Mudge.

New Equipment, Rails, Etc.

The Seaboard Air Line will purchase 10 heavy freight locomotives, 10 passenger cars and 3 combination baggage and express cars.

The Pennsylvania Railroad is reported to have ordered 40 steel suburban passenger cars 50 feet long from the American Car & Foundry Co., St. Louis.

The St. Tammany Railway & Ferry Co., Covington, La., has purchased in Chicago two compartment cars with double-enclosed vestibules.

The Hawley lines, according to a market report, are getting revised prices for 4250 freight cars, including 3000 all-steel hopper cars, 750 box cars, 250 steel under-frame furniture cars and 250 automobile cars.

The Norfolk & Western Railway, says a dispatch from Roanoke, Va., has ordered built at its Roanoke shops 500 steel hopper cars, and work will begin on them immediately.

The Louisville & Nashville Railroad has ordered 100 ballast cars from the Rodger Ballast Car Co. of Chicago.

The Norfolk & Western Railway is reported to have ordered 15,000 tons of 100-pound rails from the United States Steel Corporation.

The Atchison, Topeka & Santa Fe Railway, says a dispatch, has ordered 50 Mallet articulated locomotives for early delivery.

The Great Falls & Dominion Railroad is reported in the market for several electric cars. Address Washington, D. C.

The Atchison, Topeka & Santa Fe, according to a market report, has ordered 600 tons of structural steel from the American Bridge Co. of New York.

The Richmond & Henrico Railway, Richmond, Va., is reported to have ordered 12 closed cars from the Southern Car Co., High Point, N. C.

The Atlantic Coast Line Railroad Co. confirms the report that it has purchased 25,000 tons of 85-pound steel rail, part of which will be used to relay the line between Waycross and Albany, Ga.

The Beaumont (Tex.) Traction Co., says a market report, has ordered three semi-convertible double-truck pay-within cars from the American Car Co., St. Louis.

The Metropolitan Street Railway Co., Kansas City, Mo., is receiving deliveries on an order of 25 cars placed with the Cincinnati Car Co. These cars are 47 feet long, and will seat 44 passengers.

The Southern Railway, according to a

report from Birmingham, Ala., has ordered 3000 steel coal cars for use in the Birmingham and Tennessee coal districts.

Telephones for Queen & Crescent.

[Special Cor. Manufacturers Record.]

Cincinnati, O., November 1.

The telephone is to take the place of the telegraph on part of the Queen & Crescent Route between Cincinnati and Chattanooga, according to announcement made by General Manager Horace Baker. Between Danville, Ky., and Oakdale, Tenn., 137 miles, the installation of dispatching telephones has been authorized, and they will be used as soon as finished. The traffic on this division is very heavy, 55 miles being double track.

The telephone has several advantages over the telegraph. It is quicker, and errors can better be guarded against. The dispatcher writes the order as he sends it, spelling out all figures, such as train numbers, engine numbers and time. The receiver writes the message as he receives it and then repeats it to the dispatcher, spelling out all figures in the same way. Telephone instruments can be installed at switches and sidings where it would be impracticable to maintain telegraph offices and operators. Thus the crew of a train can communicate with the dispatcher and ask for orders.

The laying of second main track is authorized on 12.4 miles between Oakdale and Lansing, giving double track from Harriman Junction to Lansing excepting 1.6 miles, where there are three tunnels and a bridge. This will give 74 miles of double track between Cincinnati and Chattanooga.

New Louisville & Nashville Shops.

The Louisville & Nashville Railroad Co., W. H. Courtenay, chief engineer, Louisville, has final plans for its shops previously announced as to be constructed at Boyles, near Birmingham, Ala. It is understood that about \$654,000 will be expended to erect and equip the buildings, steel. Construction began last week, and a two-story office building. Dimensions as follows: Power-house, 90x110 feet; carpenter shop, 50x200 feet; planing mill, 90x150 feet; boiler shop, 130x170 feet; machine shop, 145x170 feet; paint shop, 50x165 feet; blacksmith shop, 60x170 feet; oilhouse, 50x80 feet; freight shed, 90x350 feet; office building dimensions not announced. Buildings will be of fireproof construction, reinforced concrete with steel. Construction began last week and the plant is to be completed within eight months. Trackage to handle materials and a sanitary sewerage system has been completed. T. E. Brooks, superintendent, Birmingham, is in charge of construction.

Completing a Large Mill.

The Whiting Manufacturing Co., Philadelphia and Asheville, N. C., will complete its Judson (N. C.) mill about December 1. This plant includes buildings of frame construction, the labor cost to build being about \$15,000, and machinery costing \$30,000 for a daily capacity of 75,000 feet of lumber. The equipment includes a six-foot band mill, a band slab resaw, a lath mill, four 72x16 boilers (steel cased) and a 24x48 Corliss engine.

Shipments from Tampa.

Shipments of phosphate from Tampa during September aggregated 94,744 tons, showing a decrease of 23,792 tons as compared with shipments for August. It is explained that this decrease was expected, as shipments for September are usually light, while the shipments for August were unusually heavy.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

Lane Mill at New Orleans.

The Lane Cotton Mills Co., New Orleans, has been chartered with a capital stock of \$900,000 to acquire the Lane Mills, which was until recently a part of the Textile Mills Corporation. Sigmund Odenheimer, Maurice Stern, Harry T. Howard, Charles Godchaux and others were the incorporators.

The Glenola Mill.

The Glenola Cotton Mills, Eufaula, Ala., acquires the Barbour Cotton Mills, equipped with 5800 ring spindles, 148 broad looms, etc. This Glenola company was reported incorporated last month with \$50,000 capital stock. It will organize with John P. Foy, president; E. P. Thomas, vice-president, and C. A. Covey, secretary-treasurer.

The Dunson Mills.

The Dunson Mills of Lagrange, Ga., mentioned last week as incorporated, will manufacture cotton cloth. This company has a capital stock of \$250,000 and privilege of increasing to \$1,000,000, and the principal organizers are J. E. Dunson, W. S. Dunson, J. N. Barnard and F. M. Ridley. W. S. Dunson will be superintendent and assist in purchasing machinery.

Textile Notes.

The Brander Cotton Mills Corporation of Concord, N. C., has increased its capital stock from \$60,000 to \$85,000. It operates 4000 ring spindles and 40 broad looms on damask production.

MINING

A \$200,000 ELECTRIC PLANT.

Equipment for the Clinchfield Coal Corporation Mines.

The Clinchfield Coal Corporation of Spartanburg, S. C., and New York will invest about \$200,000 to provide electric lighting and power facilities for its mines near Dante, Va., and other towns. Plans will provide for a power-house and substation at Hurricane, W. Va., and three other substations. Contract has been closed with the Westinghouse Electric & Manufacturing Co. of Pittsburg for all electrical apparatus, which will include two 1000-kilowatt 6000-volt turbines and ten 300-kilowatt 250-volt synchronous motor generator sets, to be ready for operation April 1, 1911. Contracts for boilers and other auxiliaries are to be closed at an early date. Messrs. Ford, Bacon & Davis of New York are the consulting engineers, and are designing the buildings. This is another step forward in the Clinchfield company's plans for the thorough development of its extensive coal properties on the Carolina, Clinchfield & Ohio Railway. Among other improvements the company has recently undertaken is an expenditure of about \$50,000 to purchase and lay eight miles of iron pipe for conveying water to its mines from the Clinch River, and an expenditure of \$25,000 to build and equip a miners' accident hospital.

A Coal Briquetting Plant.

The Phoenix & George's Creek Mining Co., Stephen Girard Building, Philadel-

phia, will build a coal briquetting plant in Allegany county, Maryland. It is understood the machinery has been manufactured in Belgium, and will be received in this country during November for immediate installation. Further details will doubtless be announced soon.

Coal and Clay Development.

The Camden Coal & Clay Co. of Hot Springs, Ark., has incorporated with a capital stock of \$240,000 for the purpose of developing coal and clay deposits and manufacturing clay products at Lester, Ark. Among the incorporators of the company are Dr. A. S. Garnett, D. Frank Clark and Philo N. French.

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

To Manufacture Carbon Paper.

N. S. Joshi, Bombo, Uganda, British East Africa, writes the MANUFACTURERS RECORD:

"I have written to a few firms for their catalogues for my reference here, and have mentioned the MANUFACTURERS RECORD. I intend to start a business in Bombay, India, and at present I am undergoing experiments of manufacturing carbon papers of superior quality. I intend to use all the American materials required for my line, provided that they are suitable. I would be glad to receive from you some general guide in detail of the various American manufacturers, through which I will go carefully and make a note of possible articles which I could push in the Indian market, and ask from the different firms for further information on these points."

Metal Ceilings, Etc.

Compania de Ornamentaciones de Acero, Federico Luna y Peralta, Lima, Peru, writes the MANUFACTURERS RECORD:

"We have just completed the organization of the above company (metal-ceiling company), whose purpose is to import and sell metal ceilings, walls and wainscoting. Through our Camilo Castillo we have become acquainted with the valuable services your publication renders to the manufacturers of the United States, and we also know of the readiness with which you come to the aid of foreign buyers."

Cocoanuts and Waste Products.

O. L. Hardgrave, United States consular agent, Roatan, Honduras, Central America, writes the MANUFACTURERS RECORD:

"If you know of anyone that would like to engage in business in this country, then tell them to investigate this place for cocoanuts and waste products. The Bay Island of Honduras produces about 10,000,000 nuts yearly. All of the coconut fiber and about 1,000,000 nuts are lost each year."

For Talc Manufacturers.

Richard S. Dahl, P. O. Box 386, Sydney, Nova Scotia, Canada, writes the MANUFACTURERS RECORD:

"I am desirous of getting in touch with manufacturers of talc products, not with a view to buying products, but of selling them the raw materials. Could you put me in communication with any of them?"

MECHANICAL

Making Dustless Roads in Georgia.

Southern communities are more and more realizing the advantages derived from

again this year will be conducted in Savannah on November 12. This contract provides for oiling 13 miles of roadway, together with reolling that portion of the course which was treated last year. This



SAVANNAH AUTOMOBILE COURSE NEAR BEULIET.

the building of dustless roads and from oiling their improved highways to render them dustless. In few cases now are improved roads built without either making them dustless in the beginning or without

contract, it is stated, was awarded the Indian Refining Co. on the merits of last year's work, which still remains in satisfactory condition. The three accompanying illustrations give a good idea not only



SAVANNAH AUTOMOBILE COURSE TURN AT ISLE OF HOPE.

oiling them after they are built. Indicative of this work in the South are some important contracts recently secured by the Indian Refining Co., Cincinnati, O.,

of the splendid construction features of this automobile course, but also show the value of having them oiled. Another important piece of road work



SAVANNAH AUTOMOBILE COURSE. SKIDWAY CAUSEWAY.

both for oiling roads and building dustless roads in Georgia.

One of these contracts calls for the preparation and oiling of the automobile course for the grand prize race, which

being undertaken in Georgia is that of building a bituminous macadam on East Point road, Atlanta. For this work the Fulton County Commissioners specified the use of Indian asphalt binder.

New Sectional Unit Switchboard.

Some time or other every "Bell" manager has been confronted with the problem of selecting a type of switchboard for his small exchanges which would not only meet present service conditions, but also take

of the time, and therefore a floor or desk type of switchboard having a suspended transmitter is quite essential.

With the sectional unit scheme a switchboard cannot only be increased in capacity, but it also can readily be converted to any desired type.



NO. 1800 SECTIONAL UNIT DESK TYPE.

care of future growth. This has been all the more perplexing when he has been unable to determine with any degree of accuracy what future requirements might be. Thus he has often found it necessary either to purchase a switchboard that might serve for only a short time and then have to be discarded, or purchase one which he thought would be large enough to take care of future growth. In many cases, however, it was found that this large switchboard was of such size that it never could be made full use of.

This problem has been solved by the Western Electric Co. of Hawthorn, Ill., and New York, with the design of its new No. 1800 unit type switchboard. This switchboard is built up of several separate units, comprising the following: (a) Top units; (b) line units; (c) cord units; (d) supporting units.

As the telephone company's requirements increase so can the switchboard capacity be increased, and at all times the telephone company has a minimum investment.

The top units can be supplied with either a hand telephone set or a suspended transmitter.

The line units can be supplied with either self-restored jacks and signals, manually restored drops and jacks, ringers, through toll line apparatus, etc.

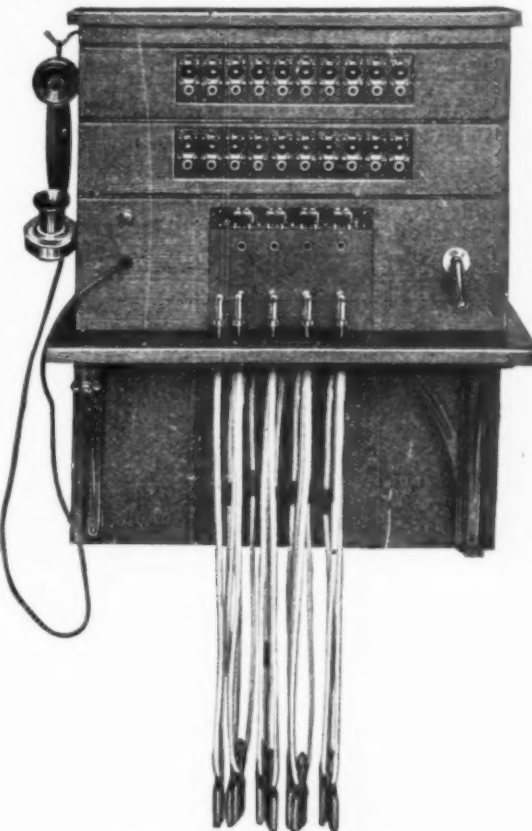
The cord units can be supplied with either listening jacks and supervisory drops or ringing and listening keys and supervisory drops. They can further be furnished with the following different features: (a) Single supervision; (b) single supervision, non-hang-up; (c) single supervision, non-ring-through, non-hang-up.

The supporting units can be supplied of three general kinds: (a) For wall type of switchboard; (b) for floor type of switchboard; (c) for desk type of switchboard.

Many small switchboards are located in business places or private homes where the operator has other duties to perform. Under such conditions a wall type of switchboard equipped with a hand telephone set is found the most desirable.

As the telephone company's business increases the operator may be required to be seated at the switchboard the greater part

There are many hundreds of switchboards capable of giving several years of service that are stored away because the telephone companies have no further use for them, since they no longer fit in with the new order of things. Such switchboards are unquestionably a bad investment.



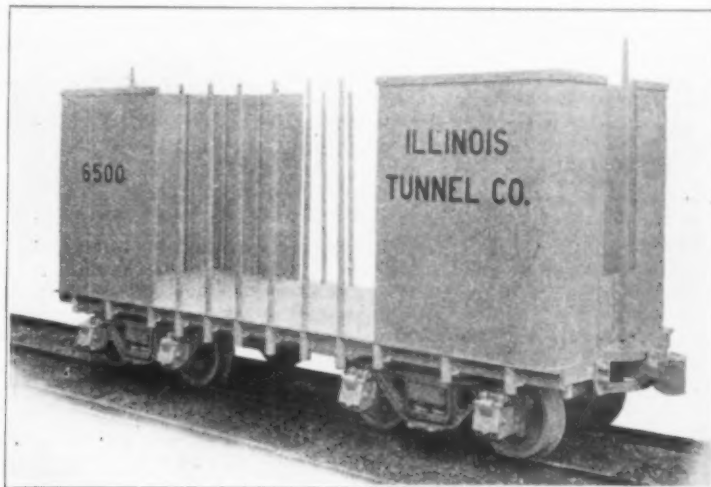
NO. 1800 SECTIONAL UNIT. WALL TYPE.

ment, because the telephone company did not realize the full value from the same. On the other hand, this new unit type of switchboard would be a good investment, since on account of its elasticity a place of service could always be found either in the whole or in part.

All of these units are especially designed

so that they can be assembled together and installed with unskilled help. Screw type of terminals are provided for all of the line wire connections. All electrical connections between units are automatically made by means of the machine screws that hold the various units together; thus it is impossible to connect them up wrongly.

height, 5 feet 1 5/16 inches; over-all width, 3 feet 9 1/2 inches; gauge of track, 24 inches. Each car is built to carry 15,000 pounds, and is steel throughout. The sides and end shields are removable, being riveted to stakes which fit into stake pockets. Each is equipped with automatic couplers and spring draft gear. The trucks are equipped



STEEL TUNNEL CAR USED AT CHICAGO.

The design of this new Western Electric board has been carried out in a most comprehensive manner. This series includes a total of 30 different units, which enables the telephone company to meet every legitimate condition. (See the two accompanying views.)

Illinois Tunnel Car.

An accompanying view illustrates the steel car used in a system of tunnels underneath Chicago. These tunnels are accessible from the basements of various large

with Andrews cast-steel side frames, while the bolsters are also of cast steel.

Berry Bros.' Power Wagon.

An accompanying illustration is a view of the Grabowsky power wagon built for Berry Bros., Ltd., the well-known varnish manufacturers, of Detroit. This wagon is a replica of the famous toy wagon introduced by this firm many years ago.

The body of the auto truck is constructed of handsome quartered oak, well finished with Berry Bros.' varnish, and has a capacity of two tons.

The lettering on the truck and its gen-



BERRY BROS.' POWER WAGON.

eral characteristics are in exact imitation of its small prototype.

An interesting item in connection with Berry Bros.' toy wagon is the shipping of a load of varnish overland packed in toy wagons from Berry Bros.' factory to their New York warehouse at 262 Pearl street.

The vehicle transporting this unique load was built by the Grabowsky Power Wagon Co. of Detroit.

Monolithic Concrete Houses at Gary.

It is always interesting to note the thought and study which large industrial companies devote to the welfare of their employees. It has been demonstrated that not only does such work induce cleaner and better living among the employees, but makes them more content and stimulates better work.

In planning the great industrial city of Gary, Ind., the United States Steel Corporation has endeavored to incorporate every device that would make an ideal city, both as to serving purposes of manufacture and the comfort of employees. The company has grouped branches of a number of its subsidiary concerns, among them being the American Sheet and Tinplate Co. This branch is now arranging for the erection of about 200 workingmen's houses. These

mercantile establishments, so that general merchandise can be very cheaply loaded into these cars and transferred to various points about the city. Mail is also handled by this system. Cars of this design, 500 in all, were built by the Kilbourne & Jacobs Manufacturing Co. of Columbus, O. Their over-all length is 12 feet 5 1/2 inches; over-all

are especially interesting, as they are the result of much consideration on the part of the company's engineers, and are expected to represent ideal conditions. They will be of concrete, constructed with the use of patented metal forms for building monolithic concrete work, which system, it is said, has been demonstrated will enable the houses to be erected at less cost than houses of frame construction.

The company's engineers carefully investigated the various systems of monolithic concrete construction before determining which one would be adopted. As a result, the metal forms made by the Reichert Manufacturing Co. of Milwaukee were adopted. As these forms were wanted within 60 days after their selection, and as the Reichert Manufacturing Co. was practically sold up at that time, it was not in a position to deliver such a large quantity of forms in less than six months. Consequently, it was arranged that approximately 50,000 square feet of form surface should be manufactured in one of the plants of the American Bridge Co. according to the patented designs of the Reichert forms.

The buildings planned for Gary include not only cottages of various sizes, but also several buildings containing three, four and five-room flats. These flat houses will be of quite artistic designs, and no two will be exactly alike. It is understood that the first construction work will probably be on the flat houses, as the company is urgently in need of living quarters for its employees.

In the construction of the buildings the forms will be set up for the basement walls, partitions and chimney, together with the floor panel above it, and all of these will be poured at the same time. Enough plates have been purchased to keep 10 cottages in course of construction at one time. As soon as the concrete has been placed in the first set of forms the mixer, hoist, etc., will be moved on to fill the second set of forms, and so on until the tenth form is filled. By that time the plates will be taken off on the first basement and set up to make the first floor walls and ceilings, and after the mixer has gone down the line the second time it will return and make the second floor, and after that the plates will be set up to make the roof, many of which will be gabled.

It is expected that the exterior of the majority of the houses will be plain concrete treated with sand blast, while in a number of instances timbers will be sunk in the outside face of the concrete for decorative purposes. In finishing up the interiors of the houses it has been decided that lath and plaster will not be used, the interior finish being directly placed on the concrete wall.

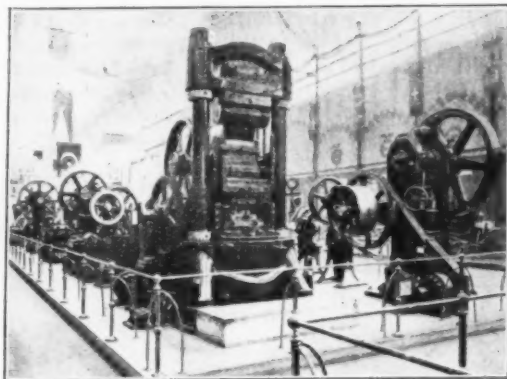
An interesting feature in connection with the designs of the kitchens of the houses has been planned by the engineer in charge of the work. This provides for special ventilation to rid the kitchens of the moisture and odors incidental to cooking.

The construction of these houses will be watched with a great deal of interest not only because it marks an advance in such work, but also because the construction of 500 dwelling-houses at Cory, Ala., the Southern branch of the United States Steel Corporation, and 200 houses at its plant near Duluth will be governed by this work.

E. W. Bliss Company Exhibit.

In competition with manufacturers from all parts of the world, the E. W. Bliss Company of Brooklyn, N. Y., has received the highest awards and grand prize for its machines at the Brussels Exposition. The awards are indications of the high standard of the E. W. Bliss machines, which are known throughout the industrial

world. These machines are designed for the manufacture of sheet metal articles and thumb-screw. The round center in the pattern is an eccentric, so that one end of

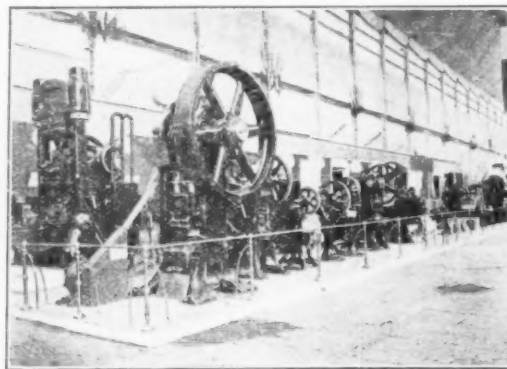


E. W. BLISS COMPANY EXHIBIT AT BRUSSELS.

drop forgings. They include presses, drop hammers, shears, dies, etc., and machinery designed and built for special purposes.

The work can be made larger or smaller without changing the other end.

"The eye of a handle or spoke can be



E. W. BLISS COMPANY EXHIBIT AT BRUSSELS.

Two accompanying illustrations present views of the E. W. Bliss exhibit at Brussels.

No. 1 Ober Lathe.

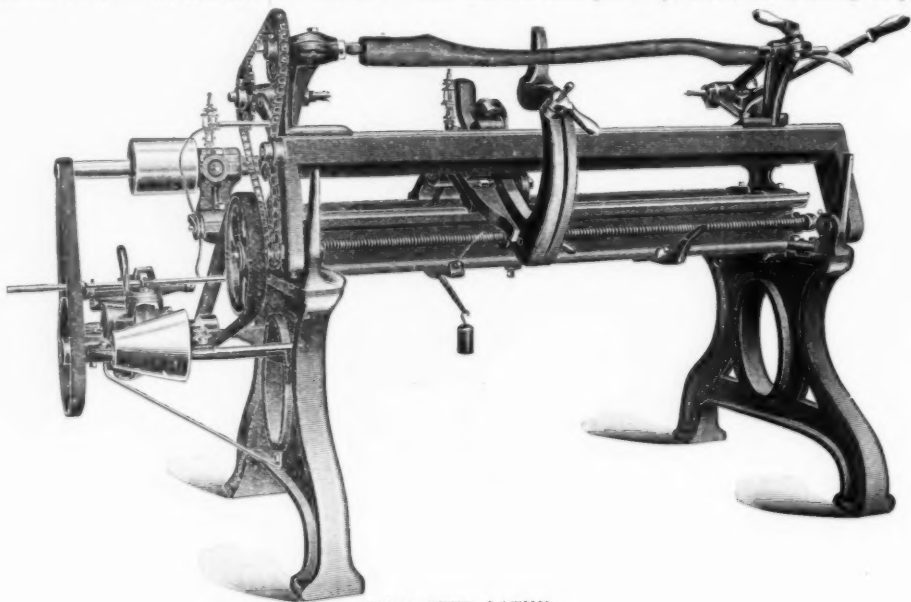
Purchasers of machinery for woodworking are invited to investigate the No. 1 Ober lathe. (See accompanying illustration.) This lathe is made at Chagrin Falls, O., by the Ober Manufacturing Co., which says its No. 1 lathe "will turn axle,

made longer or shorter without changing the pattern.

"Axe handles are finished in the lathe, i. e., they do not have to be throated on another machine, but are ready to go to the sanding machine when they leave the lathe.

"Spokes are squared in the lathe when they are turned.

"The No. 1 lathe will not turn porch



NO. 1 OBER LATHE.

adze, pick, sledge, hatchet and hammer handles, spokes, whiffletrees, gun stocks, lasts and other kinds of irregular work. It will turn from 30 to 60 axle handle, 40 to 60 pick handles, 100 to 125 nail or machinists' hammer handles, 100 to 150 spokes per hour, and other work accordingly.

"It will turn like a pattern, and can be made to turn larger or smaller by simply loosening a set-nut and moving the rest toward or from the head by means of a

spindles, table legs, chair legs or that class of work.

"Wood patterns can be used, but should be made large enough to avoid springing.

"The feed screw and pattern can be made to revolve faster or slower while in motion by the operator, or automatically by a trip which moves the small friction pulley between the reverse cones, giving any desired motion. The trip can be set at any point on the bed, and is operated by the carriage that carries the cutter-

head. It can be set to move the friction pulley the entire length of the cone pulleys, or a shorter distance, thus making a great or small difference in the speed.

"The carriage carrying the head and rest is moved forward by a screw and two-part nut, the nut being opened automatically when the work is completed, and the carriage is drawn back by a weight, at the same time placing the trip in position for the next stick to be turned.

"The work is started automatically by tipping the carriage forward to turn the article, and stopped by tipping it back to take out the article when finished.

"The head is so constructed that the knives will not gouge into the work nor allow sticks to get into them and break them.

"The lathe will turn from 8 to 43 inches in length.

"The lathe is very simple, strong and durable.

"It is all iron and steel, and weighs about 1200 pounds.

"This lathe requires about two horsepower.

"A good countershaft is furnished with each lathe.

"The tight and loose pulleys on the countershaft are 10 inches in diameter for five-inch belt, and should turn 1000 revolutions per minute."

The Story of Sugar (Illustrated). By George T. Surface. Publishers, D. Appleton & Co., New York and London. Price \$1.

This volume is intended to convey accurate and readable information on the sugar industry in the different periods and stages of its development, an industry which has had a remarkable influence upon the history of the Western Continent. In it are discussed the occurrence of sugar in nature, the earlier history of its preparation for consumption, its value as food, the controlling factors in the production of sugar-cane and of sugar beets in this country and abroad, the manufacture of sugar, syrups, candy as a national luxury, by-products, the handling of products from

refiner to consumer and the future sugar supply of the world.

The annual meeting of the Texas Commercial Secretaries' Association at Waco has been postponed to Friday and Saturday, November 18 and 19. Time to prepare for the census celebration of the State's increase in population, which will be a feature of the meeting, made it necessary to change the date from November 10 and 11, as originally announced.

Construction Department

TO OUR READERS!

In order to follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and when this is necessary the statements are made as rumored or reported, and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be shown on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular.

"In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned."

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year. On all advertising contracts in the Manufacturers Record for three months or longer a subscription for the contract period to the Daily Bulletin is included.

BRIDGES, CULVERTS, VIADUCTS

Fla., West Palm Beach.—Lake Worth Bridge Co. incorporated with \$30,000 capital stock to construct bridge across Lake Worth, in Palm Beach county; E. N. Dimick, Palm Beach, Fla., is president; H. G. Geer, vice-president; George W. Jones, secretary-treasurer, both of West Palm Beach.

Ga., Savannah.—Atlantic Coast Line Railroad, E. B. Pleasants, chief engineer, Wilmington, N. C., is considering construction of steel bridge over tracks at Habersham and 37th Sts. or building of subway.

Okla., Elk City.—Wichita Falls & Northwestern Railway Co., R. A. Thompson, chief engineer, Wichita Falls, Tex., will construct 17 trestles with total length of 1500 feet.

S. C., Greenville.—Greenville county will construct steel bridge over Mush Creek near Tigerville and one over Brushy Creek on Augusta Rd., five miles from Greenville; J. P. Goodwin, Supervisor. (See "Machinery Wanted.")

Tenn., Dyersburg.—Birmingham & Northwestern Railway, R. M. Hall, president, will construct 1200-foot trestle.

Tex., Burkburnett.—Burkburnett Bridge Co. incorporated with \$18,000 capital stock by J. G. Hardin, W. T. Willis and W. W. Graham.

Tex., Burnet.—Burnet county voted issuance of \$12,000 of bonds for construction of bridge across Colorado River at Bluffton, Tex. Address County Commissioners. (Recently mentioned.)

Tex., Dallas.—Dallas County Commission-

ers adopted ordinance authorizing Ira G. Hedrick, consulting engineer, Kansas City, Mo., to change plans widening Dallas-Oak Cliff viaduct to 53 feet, instead of 50 feet as at first planned; will provide clear roadway of 44 feet between curbs; additional expenditure, \$33,000; contract for construction according to original plans has been awarded to Corrigan, Lee & Halpin, Kansas City, Mo., at \$445,000; county awarded contract for 75,000 barrels of Portland cement to be used in structure to Southwestern States Portland Cement Co. of Dallas. (Recently mentioned.)

Tex., Fort Worth.—Tarrant county will construct concrete bridge over Sycamore Creek, also 40-foot span steel bridge over Little Bear Creek on Smithfield and Pleasant Run Rds.; bids will be received until November 14; C. J. McKenna, County Auditor. (See "Machinery Wanted.")

Va., Isle of Wight.—Bids will be received until November 7 for construction of concrete bridge across Great Swamp in Isle of Wight county; to be 35-foot beam span; P. St. James Wilson, Highway Commissioner, Richmond, Va. (See "Machinery Wanted.")

W. Va., Wheeling.—Ohio county will construct bridge across Glens Run; bids opened November 2; Fred H. Frank, clerk County Commissioners.

CANNING AND PACKING PLANTS

D. C., Washington.—Swift & Co., main office, Chicago, Ill., local office, 322 Pennsylvania Ave. N. E., Washington, will, it is reported, erect warehouse and manufacturing plant at 1st and L Sts. N. E., including refrigerating, cold-storage, sausage and smoked-meat plants and stables; two stories with basement; concrete and brick; 70x120 feet; cost \$75,000.

Miss., Greenville.—W. P. Kretschmar is temporary secretary of committee interested in locating canning factory and packing plant.

Miss., Jackson.—C. A. Wilson of Lexington, Miss., is interested in establishment of meat-packing plant capitalized at \$250,000 to \$350,000.

CLAYWORKING PLANTS

Ga., Rome.—Fame Art Tile Co. incorporated with \$10,000 capital stock by W. J. Nunnally and others.

Md., Baltimore.—Clay Products.—Baltimore Clay Products Co., Lafayette Ave. and Pennsylvania Railroad tracks, is reported to make improvements to plant.

Mo., St. Louis.—Clay Products.—Calhoun Clay Products Co. incorporated with \$100,000 capital stock by Chas. P. Tiley of Belleville, Ill., and others.

Okla., Lester.—Clay Products.—Camden Coal & Clay Co. incorporated by A. S. Garnett and others. (See "Coal Mines and Coke Ovens.")

Tenn., Camden.—Brick and Tile.—Camden Brick, Tile & Concrete Co. incorporated with \$2000 capital stock by C. H. Kennon and G. B. Greer.

Tex., Bedford.—Bricks and Tile.—Bedford Development Co., First National Bank Bldg., Fort Worth, Tex., is endeavoring to secure establishment of brick and tile works.

COAL MINES AND COKE OVENS

Ala., Birmingham.—Yolande Coal & Coke Co. and New Connellsville Coal & Coke Co. will expend \$30,000 in repairing coke ovens, wash plants, boiler plant and other mining equipment; J. B. McClary is president of both companies.

Ark., Lester.—Camden Coal & Clay Co. incorporated with \$200,000 capital stock by Dr. A. S. Garnett, D. Frank Clark and Philo N. French; will mine coal and clay and manufacture clay products; offices in Hot Springs, Ark.

Ky., Pike County.—Consolidation Coal Co., Continental Bldg., Baltimore, Md., and 1 Broadway, New York, is understood to be completing negotiations for 100,000 acres Pike county coal land with view of early development; rumors state price will be \$4,500,000.

Ky., Stearns.—Stearns Coal & Lumber Co., now mining 1000 to 1200 tons coal daily, will increase to 2000 tons within six months. (See "Lumber-manufacturing Plants.")

Va., Roanoke.—Blue Ridge Coal Co. incorporated with \$3000 capital stock; F. C. Hutton, president; W. M. Brown, secretary-

treasurer, both of Roanoke; Gothard Huet-tell, vice-president, Norton, Va.; will develop 150 acres land; daily output, 250 tons of coal; no further equipment needed.

West Virginia.—Jackson and West Virginia Fuel Co. incorporated with \$5000 capital stock by James B. Douglas, A. B. Smith, W. B. Smith, L. V. Browne and C. W. Folkert, all of Dayton, O.

COTTON COMPRESSES AND GINS

Ala., Calera.—Mareus & Littleton will rebuild cotton gin recently reported burned; construction will not begin for several months.

N. C., Kittrell.—Kittrell Union Ginning Co. incorporated with \$25,000 capital stock by J. P. Hunt and others.

Okla., Elmer.—Henry Kimball will rebuild five-stand cotton gin reported burned; loss \$12,000.

S. C., Zion.—Mt. Zion Ginnery & Milling Co. incorporated with \$5000 capital stock; A. C. Cannon, president; C. C. Clark, secretary-treasurer.

COTTONSEED-OIL MILLS

Ga., Macon.—Southern Cotton Oil Co., 27 Beaver St., New York, will rebuild portion of plant recently burned.

Ga., Blakely.—Georgia Cotton Oil Co. will rebuild ginning plant reported burned; loss \$12,000; branch of American Cotton Oil Co., 27 Beaver St., New York.

S. C., Jefferson.—Jefferson Cotton Oil Co. organized; G. W. Gregory, president; J. W. Miller, vice-president; J. C. Miller, secretary and manager; will establish \$25,000 mill.

Tex., Houston.—Merchants & Planters' Oil Co. will rebuild main building reported burned; loss \$25,000.

DRAINAGE AND IRRIGATION

Ark., Youngtown.—Commissioners of Drainage District No. 1, Edward Young, secretary, will receive bids until December 1 for construction of main and several lateral canals; work will consist of 12,000 feet of main ditch, average depth of 5 feet and bottom width of 10 feet, and 600 feet of main ditch, average depth of 6 feet and bottom width of 12 feet; 12,500 feet of lateral ditches, average depth of 5 feet and bottom width of 4 feet, and 15,700 feet of lateral ditches, average depth of 4 feet with bottom width of 2 feet; about 52,500 cubic yards excavation required for main canal and 31,500 cubic yards for lateral ditch; W. J. Parkes, engineer for district, 107½ Main St., Pine Bluff, Ark. (Recently mentioned under Star City, Ark. See "Machinery Wanted.")

Fla., West Palm Beach.—Paul F. Jenkins, civil engineer, has been engaged by land companies to make survey of Hillsboro Valley, which includes marsh lands west of coast ridge; if practicable, drainage canal will be constructed northward from Hillsboro River to Lake Clark, which will drain territory from Okechohee Rd. west of West Palm Beach southward to Deerfield.

Ky., Paducah.—Luther Carson, manager of Coca-Cola Co., Paducah, and B. R. Thomas, Chattanooga, Tenn., purchased Blizard Pond for \$5000; canal is being constructed to drain land.

ELECTRIC LIGHT AND POWER

Ala., Marion.—R. K. Coe, Dr. T. J. Krouse, Hugh Mallory and R. L. Ellis, all of Selma, Ala., purchased Marion Light & Power Co.'s plant, and will improve.

Fla., Fort Meade.—S. T. Rivers will install electric-light and power plant; cost \$4000; construction by owner; machinery to include 50-horse-power engine, 35 kilowatts, 230 volts, alternating-current generator, three-kilowatt D. C. exciter and switchboard. (City Council recently noted to have granted franchise.)

Ga., Americus.—City will vote November 8 on issuance of \$15,000 electric-light bonds. Address The Mayor.

Ga., Ballground.—A. J. Lovelady will, it is reported, install electric plant for hotel and store; equipment will include gasoline engine, dynamo and storage battery; 50 lamps of 16 candle-power.

Ga., Ellerton.—Hill Power Co. incorporated with \$50,000 capital stock by W. O. Jones, S. L. Hill, L. H. Hill and others. (Recently incorrectly reported under Ga., Coweta.)

S. C., Darlington.—Darlington Water & Electric Co. will improve electric-light plant.

Tex., Bellaire, P. O. Houston.—Westmoreland Investment Co. will erect building in which to install 30-kilo unit for electric lighting and machinery for water-works pumping station; ultimate expenditure, \$30,000; equipment ordered.

Tex., Jasper.—Jasper Electric Co. incorporated with \$5000 capital stock by H. C. Howell, J. H. Seale and O. M. Stone.

Tex., Fort Worth.—J. R. Nutt of Citizens' Savings & Trust Co., Cleveland, O., is having plans prepared by Cleveland Construction Co., 606 Citizens' Bldg., Cleveland, O., for electric-light and power plant; dam to be constructed is to impound water for condenser purposes; further details not available at present. (Recently noted authorized to take over electric franchise and properties of Fort Worth Light & Power Co. and properties of Fort Worth Gas Co.)

W. Va., Hurricane.—Cinchfield Coal Corporation, Spartanburg, S. C., and 24 Broad St., New York, plans construction of powerhouse and substation at Hurricane and three other substations; contract awarded to Westinghouse Electric & Manufacturing Co., Pittsburgh, Pa., for all electrical apparatus; latter to include two 1000-kilowatt 6600-volt turbines and 10 300-kilowatt 250-volt synchronous motor generator sets, to be ready for operation April 1; contracts for boilers and other auxiliaries to be closed at early date; cost about \$30,000; Ford, Bacon & Davis, 115 Broadway, New York, consulting engineers, are now designing buildings.

FERTILIZER FACTORIES

S. C., Florence.—Company is being organized with \$50,000 capital stock by J. F. Stack-ley, Eugene F. Douglas, Henry S. Rose and others to establish fertilizer factory.

FLOUR, FEED AND MEAL MILLS

Ala., Aliceville.—Aliceville Grain & Milling Co., recently reported incorporated (at Montgomery, Ala.) with \$2500 capital stock, awarded contract to Aliceville Lumber Co., Aliceville, for erection of two-story frame building; will install 25-horse-power engine and 30-horse-power return-due boiler; J. B. Cunningham, president; C. G. Hancock, vice-president; E. H. Fitzpatrick, secretary-treasurer.

Ark., Hot Springs.—R. L. Williams, recently noted to establish mill, has plans for 28x 24-foot building; construction by owner; has purchased machinery; daily capacity, 40 barrels flour.

Ky., Irvington.—Irvington Mill & Elevator Co. incorporated with \$12,500 capital stock by W. J. Piggott, John C. Payne and John R. Winn.

Ky., Paducah.—Paducah Milling Co. incorporated with \$25,000 capital stock by C. C. Davis, H. P. Hawkins, Jr., James B. Conner and U. S. Walston.

Tenn., Dyersburg.—Lily Mills incorporated with \$10,000 capital stock by Henry A. Klyer, G. W. Whitaker, J. H. Craig and others.

Tex., Corpus Christi.—Cactus Mill Co. incorporated with \$25,000 capital stock by W. R. Pope, J. A. Broadbue and C. E. Hastings.

Tex., Balmorhea.—Toyah Valley Alfalfa Milling Co., previously reported incorporated with \$25,000 capital stock, has nearly completed 50-ton alfalfa mill recently noted; machinery purchased; H. A. Marans, president and treasurer; E. D. Balcom, vice-president; H. C. Edwards, secretary; S. W. Field, manager.

FOUNDRY AND MACHINE PLANTS

Ky., Louisville.—Iron Work.—S. C. Shepard will erect two-story brick addition to plant at 9th and Congress Sts.; will install additional equipment.

Md., Baltimore.—Gas Plant Shops.—Gas & Electric Co., Lexington and Liberty Sts., will, it is reported, erect distribution shops; two stories; brick; sufficient capacity to house 10 carloads of gas ranges and miscellaneous appliances and materials; adjoining will be stable and garage.

Mo., St. Louis.—Stoves.—Charter Oak Stove & Range Co. (recently reported to increase capital stock to \$100,000) awarded contract to Edward Ward, Chemical Bldg., St. Louis, for erection of buildings covering eight acres; mill and fireproof construction; cost \$200,000; plans by Kilpstein & Rathman,

Chemical Bldg., St. Louis, will install machinery to cost \$150,000; daily capacity, 250 ranges and furnaces.

W. Va., Cabell.—Chris and William MacTaggart, I. C. Prince and T. H. Wickham, all of Beckley, W. Va., will rebuild foundry and machine plant reported burned.

GAS AND OIL DEVELOPMENTS

Ark., Springdale.—Home Developing Co. organized with \$25,000 capital stock; James Walton, president; James Hewitt, vice-president; I. M. Riggs, secretary; Mat Logan, treasurer.

La., Alexandria.—Paul Lisso Mineral Co., Ltd., incorporated with \$6000 capital stock; Paul Lisso, president; Clarence Pierson, vice-president; Walter D. Hill, secretary-treasurer; will develop oil, gas and mineral deposits of Vinton oil fields in Calcasieu parish.

La., Caddo.—Guarantee Oil Co., Ltd., recently reported organized at Texarkana, Tex.-Ark., will begin within 90 days to drill well on 90-acre tract of gas and oil land in Caddo oil field; capital stock \$350,000; W. E. Green, president.

La., Shreveport.—Shropshire Oil Co., Florence P. Shropshire, president, recently reported incorporated with \$30,000 capital stock, will develop 20-acre tract of leased land; has engaged Etchison Drilling Co., Shreveport, to drill well; Fisher Durham is engineer in charge.

Okla., Muskogee.—Associated Oil & Gas Co. incorporated with \$20,000 capital stock by H. E. Stone, John A. Connelly and Adolph M. Schulz.

Okla., Tulsa.—Lura Oil Co. incorporated with \$50,000 capital stock by A. C. Leigh of Grenada, Miss.; C. W. Deming and D. C. Acosta of Tulsa.

Tex., Pecos.—J. R. Sharp, C. E. Morgan and associates are interested in development of oil land near Pecos.

Tex., Houston.—Kent Oil Co. incorporated with \$6000 capital stock by G. V. Kane, Gavin Hamilton and Coke K. Burns.

W. Va., Marlinton.—Pratt's Run Oil & Gas Co. incorporated with \$40,000 capital stock by E. M. Arbogast, H. S. Gierhart, C. A. Yeager, T. S. McNeel and C. W. Price.

ICE AND COLD-STORAGE PLANTS

Ga., Macon.—Atlantic Ice & Coal Corporation will rebuild portion of plant recently burned and make other improvements.

Miss., McComb City.—McComb City Ice & Cold Storage Factory, Hugh McComb, manager, will install 10-ton ice machine.

Tex., San Antonio.—R. T. Pruitt will construct \$25,000 cold-storage plant to replace burned structure.

IRON AND STEEL PLANTS

Ala., Holt.—Iron Furnace.—Central Iron & Coal Co. has blown in iron furnace, which has been relined and repaired; New York office, 47 Wall St. (Recently mentioned.)

Tex., Austin.—Rolling Mills.—Kenton Iron & Steel Co., South Charleston, W. Va., contemplates building rolling mills; R. F. Reeves, representing company, is now negotiating with Austin Business League as to location.

LAND DEVELOPMENTS

Ala., Birmingham.—Edgewood Land Co. incorporated with \$2000 capital stock; Steve Smith, president; G. T. Brazleton, treasurer; Curran S. Goodwin, secretary.

Ark., Stuttgart.—Stuttgart Development Co. incorporated with \$80,000 capital stock by J. W. Underwood (president), M. Schuller, Ray Underwood and others.

Ark., Union County.—Marshall Land Sales Co. of Des Moines, Ia., will colonize 30,000 acres of land in Union county.

Fla., Fort Pierce.—Florida East Coast Realty Co. organized with \$30,000 capital stock; W. S. Hoskins, president, Weston, W. Va., and St. Lucie, Fla.; R. N. Koblegard, vice-president, Weston, W. Va., and St. Lucie, Fla.; T. S. Whelan, treasurer, Weston, Fla.; purchased 36,000 acres of land near Fort Pierce; will subdivide into 40-acre tracts and construct system of canals for drainage; plans main canal east and west, with laterals to connect with Taylor Creek.

Fla., Jacksonville.—Florida Homeseekers' Corporation incorporated with \$250,000 capital stock; president, S. C. Wood of Jacksonville; vice-president, C. Blaine London of Altoona, Pa.; secretary, Geo. A. Roberts of New York; treasurer, J. Mitt Wells of Jacksonville; Mr. Wood recently noted to develop 15,000 acres of land for colony and later to acquire 40,000 acres additional for colonization.

Fla., Titusville.—Titusville Fruit & Farms Co. organized with E. W. Ellis, president, Cincinnati, O.; C. J. West, vice-president; J. H. Beckwith, secretary, both of West Palm Beach, Fla.; purchased 35,000 acres of land near Titusville; will subdivide into small tracts, lay hard-surface roads and make other improvements.

Fla., Tampa.—Anna Maria Land Co., recently reported incorporated with \$25,000 capital stock, will develop 500 acres of land on north end of Anna Maria or Palm Key as winter and summer resort; C. H. Tedder is president and general manager.

Ga., Lafayette.—J. G. Hunt, James P. Shattuck, N. K. Bittling, John C. Knox and others purchased 35 acres of land at Big Springs; will acquire 65 additional acres and develop summer colony.

La., Shreveport.—J. D. Wilkinson and others, recently noted to have purchased 900 acres of land, will subdivide portion and develop 163 acres for factory purposes; will also drill gas well.

Md., Baltimore.—Lotus Realty Co. incorporated with \$5000 capital stock by Fritz Knoche, 515-57 Forrest St.; Chas. F. Stein, 213 Courtland St.; Max Miller and others.

Mo., Kansas City.—United Land & Development Co. incorporated with \$5000 capital stock by C. R. Brady, J. O. Bronaugh and others.

N. C., Biltmore.—Biltmore Development Co. incorporated with \$20,000 capital stock by Clyde S. Reed, J. P. Roberts and Kingsland Van Winkle.

Okla., Oklahoma City.—Panama Townsite & Improvement Co. incorporated with \$50,000 capital stock by Richard Ruffin of Oklahoma City, A. H. Symcox of Cordell, Okla., and others.

Tenn., Chattanooga.—Clifton Hills Realty Co. incorporated with \$100,000 capital stock by R. B. Cooke, N. Thayer Montague, Carl White and others.

Tenn., Memphis.—Rugby Estates Land Co. is being organized by W. J. Francis and others; purchased 600 acres of land for \$75,000 and will develop residence suburb to be known as Rugby; will subdivide into residence sites, construct winding macadamized and oiled driveways, plike road, street railway, concrete and steel combination railroad and vehicle bridge, etc.; initial expenditure, including site, \$250,000.

Tex., Bowie County.—St. Louis capitalists represented by J. G. Johns of Walker-Johns Lumber Co., State National Bank Bldg., Texarkana, Ark.-Tex., purchased 5200 acres of land in Bowie county for colonization; will dispose of timber, subdivide land into 40-acre farms and develop fruit orchards.

Tex., San Antonio.—Fowler Bros. Land Co., recently reported incorporated with \$60,000 capital stock, will develop 100,000 acres of land for colonization purposes; improvements to cost \$150,000; engineer not employed; C. S. Fowler, president; O. S. Dewees, vice-president; J. G. Fowler, secretary-treasurer.

Va., Harrisonburg.—Peerless Orchards incorporated with \$50,000 capital stock; W. T. Phillips, president; D. U. Poitt, vice-president, both of Norfolk, Va.; E. B. Crawford, Harrisonburg.

LUMBER MANUFACTURING

Ala., Birmingham.—Selman Lumber & Improvement Co. incorporated with \$7000 capital stock; L. S. Selman, president and general manager; J. P. Selman, vice-president; A. J. Gray, secretary-treasurer.

Fla., Washington County.—R. E. L. McCaskill, Valdosta, Ga., has, it is reported, purchased 25,000 acres of timber land for development.

Ky., Georgetown.—Penn Lumber Co. purchased Georgetown Combs Lumber Co.'s properties and will increase capital stock from \$25,000 to \$35,000; will establish box and tobacco hoghead factory.

Ky., Stearns.—Stearns Coal & Lumber Co. has organized with \$1,000,000 capital stock, as lately reported; consolidation of Stearns Lumber Co., Stearns Coal Co. and Kentucky & Tennessee Railroad Co.; properties include 113,000 acres coal and timber land on South Fork of Cumberland River in Whitley and Wayne counties, Kentucky, and Fentress and Scott counties, Tennessee; daily output, 1000 to 1200 tons coal; to be increased to 2000 tons within six months; lumber mills, now idle, have 24-hour capacity of 150,000 feet lumber and are to resume manufacturing about January 1; main offices at Stearns; Justus Stearns, Ludington, Mich., is president.

La., New Orleans.—Enterprise Lumber & Commission Co., Jewell J. Sperling, president, contemplates erecting portable sawmill.

Md., Baltimore.—H. L. Thomas & Son, 2801-

2621 Boston St., will rebuild sawmill damaged by fire at loss of about \$3500.

Miss., Goss.—Bunker Hill Lumber Co. incorporated with \$3000 capital stock by W. M. Duke, J. B. Johnson and others.

Miss., Morton.—Hall & Legan Lumber Co. incorporated with \$200,000 capital stock by A. B. Hall, G. W. Legan, Jeff Kent and others.

Mo., California.—W. H. Mengel Lumber Co. incorporated with \$12,000 capital stock by W. H. Mengel, George H. Mengel and Emma L. Mengel.

Mo., St. Joseph.—C. H. Nold Lumber Co. incorporated with \$110,000 capital stock by Charles H. Nold, James S. Taylor and Wm. G. Robbins.

Okla., Hugo.—Shelton Lumber & Manufacturing Co. incorporated with \$100,000 capital stock by J. G. Shelton, Q. R. Shelton, L. C. Shelton and William Moore.

Okla., Hugo.—Dodd-Heller Lumber Co. incorporated with \$9000 capital stock by W. Dodd, S. W. Heller, J. G. Shelton and others.

S. C., Abbeville.—Troy Lumber Co. incorporated with \$5000 capital stock by J. M. Lawton and F. E. Harrison.

Tenn., Peavine.—Dixie Coal & Lumber Co. will construct sawmill; will build incline up river.

W. Va., Huntington.—West Virginia Export Timber Co. incorporated with \$25,000 capital stock by J. F. York, G. G. Brown, A. L. McGinnis, J. T. Graham and C. W. Freeman.

MINING

Tennessee.—Tennessee Development Co. incorporated with \$75,000 capital stock by C. E. Zeek of Kilmarn, W. Va.; H. N. Martin of Menongah, W. Va.; G. W. Mack of Fairmont, W. Va., and others.

Ark., Smithville.—Lead and Zinc.—Lincoln Mining and Milling Association, Lincoln, Ill., will develop 80 acres of lead and zinc deposits; daily output of mines not determined; Dr. C. Wendell, president; N. Peck, vice-president; John R. Barnett, secretary and manager.

Md., Barton.—Barton & George's Creek Coal Co. is name of company to develop 800 acres of land recently noted; present daily output, 30 tons coal; machinery purchased; J. F. Scott, president and manager; main office address, 50 Congress St., Boston, Mass.

Mo., Joplin.—Zinc.—Eureka Mining Co. will develop zinc deposits on Helen Hunt shaft under supervision of S. R. Ping.

Mo., Joplin.—Lead and Zinc.—Deering Land & Leasing Co. incorporated by Frank S. Hamilton, Sydney L. Wilkins and Jas. W. Perry.

Mo., Sarcoxie.—Lead and Zinc.—J. W. Boyd will expend \$9000 for improvements at Boyd mine, including 150-horse-power solar oil engine and equipment including 60-horse-power electric generator, 50-horse-power electric motor and 10-horse-power electric motor; contract probably awarded.

Mo., St. Louis.—Clay, etc.—Argill Metals Co. incorporated with \$125,000 capital stock by Alfred C. F. Meyer, Wm. L. Garrels and others.

Mo., Webb City.—Lead and Zinc.—Taft Mining Co., recently reported incorporated with \$4000 capital stock, will develop 20 acres lead and zinc deposits; daily capacity 500 tons ore; Temple Chapman, president; T. J. Lennon, secretary and manager.

Okla., Miami.—Jeanette Mining Co. incorporated with \$20,000 capital stock by Geo. S. Shrader of Miami, N. E. Schoner and W. F. Shrader of Jeanette, Pa.

Tex., Bedford.—Sand.—Bedford Development Co., First National Bank Bldg., Fort Worth, Tex., is endeavoring to secure establishment of silica sand mining plant.

Va., Lee County.—Coal.—Calvin Pardee, Drexel Bldg., Philadelphia, Pa., is reported as preparing to develop Lee county coal lands.

MISCELLANEOUS CONSTRUCTION

Fla., Jacksonville.—Dock.—Atlantic Coast Line Railroad, E. B. Pleasants, chief engineer, Wilmington, N. C., awarded contract to T. J. Brown of Jacksonville to build 300-foot addition to lumber dock; construction begun.

Fla., Jacksonville.—Bulkhead.—City contemplates constructing concrete bulkhead across Lomas St., Riverside; will include \$503.85, city's one-third of cost, in 1910 budget; Philip Pringleau, City Engineer.

Fla., West Palm Beach.—Retaining Wall.—City will vote November 6 on issuance of \$10,000 of bonds for dock improvements; plans will include construction of cement retaining wall 1300 feet long and filling in of

3½ acres; boulevard is to be built through park along lake front. Address the Mayor.

Md., Baltimore.—Channel.—City will dredge 16-foot channel in upper part of Spring Gardens; will be in form of circle; distance, 3500 feet; estimated cost, \$10,000; Westport Paving Brick Co., 21 Abell Bldg., Baltimore, will pay one-half of cost.

Miss., Beulah.—Levee.—Helgason Bros., Vicksburg, Miss., are lowest bidders for construction of 182,000 cubic yards of levee work in Third District; Clarke S. Smith, Captain, Engineers, Mississippi River Commission, Third District, Vicksburg, Miss. (Recently mentioned.)

Tenn., Memphis.—Concrete Wall.—City will construct reinforced concrete wall along west side of bank of Bayou Gayoso at Overton Ave.; bids will be received until November 4; E. H. Crump, Mayor. (See "Machinery Wanted.")

Tex., Allenfarm.—Levee.—Brazos County Improvement District No. 1, W. W. Loftin, chairman Commissioners, will construct about four miles of levee and complete about eight miles of levee partially constructed; bids will be received until November 19; T. R. Batte, Jr., Improvement engineer, 806 Stewart Bldg., Houston, Tex. (Date postponed from November 5 as lately stated. See "Machinery Wanted.")

Tex., Aransas Pass.—Jetty Work.—Government awarded contract to David M. Pictou, Galveston, Tex., at \$120,750 for jetty improvements; \$70,000 is available for repairs to north jetty and \$40,000 for completion of south jetty, distance of 900 feet; about 22,000 tons of rock will be used for north jetty and 12,700 tons for south jetty; G. P. Howell, Major, Engineers. (Recently mentioned.)

W. Va., Bluefield.—Tunnel.—Norfolk & Western Railway, C. S. Churchill, chief engineer, Roanoke, Va., contemplates, it is reported, construction of tunnel between Mayberry and Barlow's Hollow, near Coopers, distance about two and one-half miles.

MISCELLANEOUS ENTERPRISES

Ala., Birmingham.—Crematory.—City plans construction of crematory; daily capacity 100 tons; cost \$100,000; C. Exum, Mayor. (Previously noted.)

D. C., Washington.—Garage.—Terminal Taxicab Co., 1219 13th St. N. W., awarded contract to Davis Construction Co., Washington, for remodeling building at 1237-39 20th St. N. W. for garage; cost \$40,000; plans by A. P. Clark, Jr., Union Trust Bldg., Washington.

Ky., Hopkinsville.—Automobiles.—Ideal Motor Car Co. incorporated with \$10,000 capital stock by Charles S. Jackson, Wm. Kimmons and S. Frankel.

Fla., Jacksonville.—Construction.—Kissimmee Valley Construction Co. incorporated with \$100,000 capital stock by W. Hale, T. H. Kooker and E. W. Curtis.

Ky., Lexington.—Laundry.—Shouse & Looney are having plans prepared by E. Stamler, Lexington, for laundry; one story; brick; three rooms; cost \$5000.

Ky., Paducah.—Dry-docks.—Ayer & Lord Tie Co., Henry Baker, manager of transportation, is reported as to construct dry-docks at foot of Jefferson St.; 200x250 feet; main office in Railway Exchange, Chicago, Ill.

Ky., Somerset.—Publishing.—Somerset Republican incorporated by N. L. Barnett, Walter Elrod, J. A. L. Jasper and others.

La., New Orleans.—Steamship Line.—Atlantic & Pacific Transport Co. will be incorporated with \$15,000,000 capital stock by Bernard N. Baker of 903-08 Calvert Bldg., Baltimore, Md., and others to establish steamship line to operate between New York, Seattle and Panama, with weekly sailings from New York, San Francisco, Cal., and New Orleans; plans to operate 15 ships.

La., New Orleans.—Electrical Works.—Burke Electric Works Co. incorporated with \$15,000 capital stock by Otto T. Maier, president; Thomas J. Burke, vice-president and James Brady, secretary-treasurer.

Md., Baltimore.—Electrical Displays.—International Movable Electrical Display Co. incorporated with \$50,000 capital stock by Charles J. F. Steiner of Steiner Mantel Co., 101 North 8th St., and others.

Md., Baltimore.—Garage.—Winton Motor Car Co., W. L. Duck, manager, 209 North Liberty St., will erect garage at Mt. Royal and Maryland Aves.; one-story; brick; private plans.

Md., Baltimore.—Copper Rolling Mill.—Baltimore Copper Smelting & Rolling Co., Fourth Ave. and 5th St., Canton (branch of American Smelting & Refining Co., New York), is progressing with enlargement previously reported; erecting additions and installing machinery to increase monthly output from

8000 to 10,000 tons; installing electrical machinery for 4000 horse-power, and will later increase to 6000 horse-power, supplanting steam engines; electricity from local transmission of Pennsylvania Water & Power Co. (McCall's Ferry development), 24 Exchange Pl., New York.

Md., Baltimore—Garage.—Geo. Gunther, Jr., Brewing Co., 1211 South 3d St., awarded contract to Engineering-Contracting Co., St. Paul and Franklin Sts., Baltimore, for erection of garage at 3d and Toone Sts.; two stories; brick and stone; 20x50 feet; concrete flooring; cost \$1800; plans by Otto G. Simonson, American Bldg., Baltimore.

Md., Frederick—Abattoir.—Frederick City Abattoir Co., Frank C. Norwood, president, awarded contract to F. B. Heppington, Frederick, for erection of abattoir plant recently noted; fireproof construction; cost \$65,000; plans by P. A. Kley, Philadelphia, Pa., who is engineer in charge.

Miss., Meridian—Cotton.—Carter Cotton Co. incorporated with \$100,000 capital stock by E. H. and E. L. Carter.

Mo., Kansas City—Grain.—Denton-Kuhn Grain Co. incorporated with \$15,000 capital stock by Oliver Denton, W. B. Kuhn, A. P. Denton and others.

Mo., Koshgonong—Koshgonong Building Co. incorporated with \$2000 capital stock by R. M. Hitt, J. H. Presley, J. S. Halloway and others.

Mo., St. Louis—Automobiles.—Washington Automobile Co. incorporated with \$10,000 capital stock by Anthony Collier, Adolph Simon, Chas. J. Schneider and others.

Mo., St. Louis—Electrical Construction.—International Electric Construction Co. incorporated with \$3000 capital stock by Roland H. Robinson, Arnold S. Dosssee, Leigh A. Dosssee and others.

N. C., Henderson—Motor Cars.—Vance Motor Car Co. incorporated with \$10,000 capital stock by H. T. Norris, F. E. Schroeder and R. G. Burroughs.

Okl., Beggs—Hardware.—Beggs Hardware Co. incorporated with \$20,000 capital stock by Ira J. Patterson of Beggs, J. Belford of Okmulgee, Okla., and Clayton Bell of Kansas City, Mo.

Okl., Muskogee—Concrete Construction.—Concrete Home Co. incorporated with \$20,000 capital stock by William Deane Ham, Alec C. Nelson and others.

S. C., Charleston—Racing Plant.—F. J. Pons, Jacksonville, Fla., will construct race track; plans not complete; construction will probably not begin until next summer.

S. C., Columbia—Garage.—Gibbes Machinery Co. has plans by J. B. Urganhart for office and garage building; two stories and sub cellar; 250 feet long; brick, concrete and steel.

S. C., Columbia—Transfer.—Jones Transfer Co. incorporated with \$10,000 capital stock; James S. Farnum, president; H. Wilken, secretary-treasurer, both of Charleston, S. C.

Tex., Beeville—Construction.—Nueces Construction Co. incorporated with \$300,000 capital stock by Wm. A. Frisby, Lee Frisby, R. M. Buck and others.

Tex., Fort Worth—Golf Links and Polo Field.—Company incorporated with \$125,000 capital stock by T. B. Yarbrough, Guy L. Waggoner, W. G. Turner and others; purchased 29 acres of land on Arlington Heights Blvd. for \$100,000; will construct 18-hole golf course and polo field and subdivide remainder for suburban-home sites.

S. C., Georgetown—Live Stock.—Nesmith Live-Stock Co. incorporated with \$20,000 capital stock by F. C. Nesmith, C. D. Cook, Jr., and M. W. Pyatt.

Tex., Dallas—Construction.—Trinity Construction Co. incorporated with \$5000 capital stock by E. M. Thomas, W. E. Skeels, L. E. Thomas and J. G. Knappe.

Tex., Galveston.—United Steamship Co. increased capital stock from \$20,000 to \$50,000.

Tex., Lampasas—Transfer.—Frazer Transfer Co. incorporated with \$4000 capital stock by Jim L. Frazer, A. M. Frazer and P. A. Frazer.

Tex., San Antonio—Automobiles.—Thomas B. Jeffery Company of Texas incorporated with \$20,000 capital stock by Charles T. Jeffery and G. M. Berry, both of Kenosha, Wis., and Geo. B. Talliaferro of San Antonio. (Recently incompletely reported.)

Tex., San Antonio—Automobiles.—Commercial Motor Car Co. incorporated with \$100,000 capital stock by Z. Z. Brandon, H. O. Skinner, L. J. Branon and others.

W. Va., Clarksburg—Construction.—Stealey Construction Co. incorporated with \$10,000 capital stock by Charles B. Alexander, Wm. F. Alexander, Jos. E. Stealey and others.

W. Va., Parkersburg—Publishing.—Journal Publishing Co. incorporated with \$5000 capital

stock by Robert Morris of Harrisville, W. Va.; Ben W. Morris, Leland S. Morris, P. W. Morris and Earl Cooper of Parkersburg.

MISCELLANEOUS FACTORIES

Ala., Birmingham—Heating Device.—Climax Heating Co. incorporated with \$15,000 capital stock; W. L. Bowman, president; E. C. Stafford, general manager; S. J. Foster, secretary-treasurer; will manufacture patented device for heating stoves, ranges, heaters, etc., with kerosene oil as fuel.

Ark., Little Rock—Paints and Oils.—Co-operative Oil & Paint Co. incorporated with \$25,000 capital stock by J. L. Deason, W. A. O'Leary, Ira L. Klein and others.

Ark., Blytheville—Mops.—Blytheville Shuck Mop Co. incorporated with \$3500 capital stock by R. L. King, P. E. Cooley, C. H. Windt and others.

Ark-Tex., Texarkana—Gas.—Texarkana Gas & Electric Co., W. L. Woods, Jr., manager, will install 16,000 additional feet of gas mains.

D. C., Washington—Stationery, Books, etc.—Charles H. Potter & Co. incorporated with \$25,000 capital stock; Charles H. Potter, president, 519 12th St. N. W.; E. D. Williams, secretary, 1920 18th St. N. W.

Fla., Daytona—Gas Plant.—Homer J. Smith will establish gas plant.

Fla., Key West—Cigars.—E. H. Gato & Co. will erect cigar factory to replace present plant; three stories; frame; 250x250 feet. (Previously noted.)

Ga., Augusta—Electrical Ranges.—Company will probably be organized to manufacture patented electric range invented by Walter Richmond of Memphis, Tenn. Mr. Richmond is temporarily with R. J. Southall, 412 McIntosh St., Augusta.

Ga., Augusta—Cigars.—Dorr Cigar Factory organized by L. A. Dorr of Americus, Ga.; leased space in Cumming Bldg. on 8th St. and will establish factory.

Ga., East Point—Monument Works.—The Leland Company, 557 Fifth Ave., New York, contemplates locating plant for monuments, statuary, etc.; has made no final decision.

Ky., Frankfort—Glass Blocks.—Standard Glass Block Co. incorporated with \$200,000 capital stock by C. E. Collins, F. J. Arbogast, Geo. C. Shaw and S. F. Hoge.

Ky., Lexington—Roxakola.—Roxakola Company, C. T. Walling, manager, Campbellsville, Ky., will establish plant.

Ky., Louisville—Tents and Awnings.—Louisville Tent & Awning Co. incorporated by Walter T. Beverly, L. C. Beverly and E. M. Conner.

Ky., Paducah—Medicine.—Dr. Bell's Pine Tar Honey Co. incorporated with \$45,000 capital stock by H. R. Lindsey, R. Rudy and W. F. Baxton.

La., Franklin—Sugar Mill.—Adeline (La.) Sugar Factory Co. will rebuild on larger scale sugar mill recently reported burned; loss \$300,000.

La., New Orleans—Buttons, etc.—J. Earl Rodgers, 610 Bienville St., will establish plant to manufacture celluloid novelties, buttons, etc.; occupy building already erected.

La., New Orleans—Chewing-gum.—American Chicle Co. of New York has plans by Geo. F. Hammond of Cleveland, O., for chewing-gum factory; 100x100 feet; brick; fireproof construction; sprinkling system; electric plant 25x80 feet. (Recently noted.)

La., New Orleans—Heaters.—Spotts Manufacturing Co., H. C. Brewster, president, 319 North Claiborne St., has plans by C. W. Cass, 307 Magazine St., New Orleans, for plant improvements recently noted; will install machinery to manufacture heaters for all purposes, including for incubators.

La., Shreveport—Oil Refining.—Indian Refining Co., First National Bank, Cincinnati, O., is understood to be planning erection of oil refinery.

Md., Baltimore—Shipyards.—Booz Bros., foot of Henrietta St., awarded contract to H. S. Crandall & Sons Company, Boston, Mass., for remodeling power plant of marine railway; will install electric double chain power giving railway lifting capacity of 2000 tons dead weight clear of water in 20 minutes, 150-horse-power electric motor to operate railway; current supplied by Consolidated Gas, Electric Light & Power Co., Liberty and Lexington Sts., Baltimore; cost of improvements \$12,000.

Md., Baltimore—Cigars.—American Cigar Co., Lakewood Ave. and Dillon St. (main office, New York), plans increasing daily output to 150,000 cigars as soon as operators can be secured; present output, 25,000 cigars daily; now occupies leased building, but plans erection of building later; J. Harrison is local manager.

Md., Crisfield—Gas Plant.—Crisfield Light & Power Co. incorporated with \$50,000 capital stock by Charles Owens, president; Robert R. Layton of Bridgeville, Del., and J. G. Gray of Wilmington, Del.

Mo., St. Louis—Jewelry.—Kaesser Bros. incorporated with \$5000 capital stock by Paul V. Kaesser, Herman Kaesser and Alf Kaesser.

Mo., St. Louis—Automobiles.—Brooks-Latta Automobile Manufacturing Co. incorporated with \$150,000 capital stock by Charles E. Brooks, Charles Latta and Allan T. Latta.

Md., Baltimore—Lecorice.—J. S. Young branch of McAndrew-Forbes Company, Boston and Elliott Sts., has plans by C. M. Anderson, 321 North Charles St., Baltimore, for plant addition; brick and steel; 118 feet 8 inches by 61 feet; cement and reinforced concrete; slag and copper roofing; Engineering-Contracting Co., St. Paul and Franklin Sts., is bidding on construction.

Md., Oakland—Creamery.—Company organized by T. W. Casteel, H. M. Casteel, E. S. West and others to establish creamery.

N. C., Henderson—Tobacco.—Farmers' Co-operative Tobacco Co. incorporated with \$100,000 capital stock by Oscar Falkner and others.

N. C., Maxton—Drugs.—Maxton Pharmacy Co. incorporated with \$20,000 capital stock by M. L. Perry, H. J. Sellers, D. L. Perry and others.

Okl., Oklahoma City—Farming Implements.—Stevenson-Clary Manufacturing Co. of Des Moines, Iowa, will erect building and equip for manufacturing hay rakes, garden cultivators, stackers, etc.; machinery purchased.

Okl., Oklahoma City—Oil Refinery.—Company incorporated with \$300,000 capital stock and W. A. Courtant, general manager, to establish oil refinery; erect brick and steel structures; 24-hour capacity, 2500 barrels illuminating oil.

Okl., Tulsa—Lightning Arrester.—Oklahoma Lightning Arrester & Electric Co. incorporated with \$10,000 capital stock by Geo. A. Stewart of Tulsa, A. B. Shawver of Grimes, Iowa, and others.

Okl., Tulsa—Cigars.—J. McCarthy of Bath, Ill., and N. E. Medley of Chandlerville, Ill., will establish cigar factory.

S. C., Laurens—Glass Bottles.—Laurens Glass Works incorporated with \$50,000 capital stock by J. N. Hudgins, L. A. McCord, C. H. Pancast and others.

S. C., Pageland—Drugs.—Pageland Drug Co. incorporated with \$5000 capital stock; J. A. Arant, president; J. A. Turner, vice-president; J. W. Turner, secretary-treasurer.

S. C., Yorkville—Creamery.—Yorkville Creamery Association, J. T. Crawford, president, recently reported incorporated with \$6500 capital stock, awarded contract to Chicago Building & Manufacturing Co., Chicago, Ill., for erection of building; cost of building and machinery, \$5250.

Tenn., Chattanooga—Specialties.—Specialty Manufacturing Co. increased capital stock from \$5000 to \$25,000.

Tenn., Jellico—Ice-cream.—Jellico Cream Co. organized by Harkness Bros. to establish ice-cream factory; erect building 25x75 feet; cost \$4000 to \$5000; machinery purchased.

Tenn., Memphis—Moving Pictures.—Majestic Amusement Co., R. C. Tarlton, president, will not establish moving-picture factory, as was recently stated.

Tex., Corpus Christi—Gas.—City Council will receive applications for gas franchise until November 18.

Tex., Fort Worth—Overalls.—American Manufacturing Co. increased capital stock from \$25,000 to \$50,000 and changed name to Fort Worth Overall Co.

Tex., Fort Worth—Carbonic Acid Gas.—Stockholders of Parker-Browne Company and others are interested in establishment of plant to manufacture carbonic acid gas; cost \$30,000.

Tex., San Antonio—Vinegar.—R. M. Hughes will erect \$25,000 vinegar factory to replace plant recently burned.

Tex., San Angelo—Windmills, etc.—James P. Allen contemplates organization of \$100,000 company to establish plant to manufacture windmills, etc.

Tex., San Marcos—Showcases.—Acme Manufacturing Co. increased capital stock from \$20,000 to \$30,000.

Va., Farmville—Clothing.—F. H. Head Manufacturing Co. incorporated with \$30,000 capital stock; Jos. Horner, president, Williams-town, Ky.; J. L. Buggs, secretary-treasurer; C. M. Robeson, vice-president, both of Farmville.

Va., Fredericksburg—Trousers.—Washington Woolen Mills Co., J. C. Melville, president, Chambersburg, Pa., awarded contract

to E. G. Hedlin for erection of trousers factory; 120x50 feet; two stories with offices in addition; cost \$7000; will install sewing machines; daily capacity, 600 pairs trousers. (Lately noted.)

Tex., Houston—Shipyards.—Brown & Sims of Galveston and Tom Copping of Copping Transportation Co. of Houston will establish shipyards, including construction of three sets of ways for pleasure craft, cross set and long ways for larger boats, machine shop equipped with lathes, etc.

Va., Norfolk—Clothing.—Rosenstein Bros. Company incorporated with \$50,000 capital stock; Wm. Rosenstein, president; Jesse Rosenstein, vice-president, both of Rosenstein Bros., 509-13 South Broadway; Edward J. Rosenstein, secretary, 1504 Eutaw Pl.; all of Baltimore, Md.

Va., Norfolk—Gas.—Pintsch Compressing Co. of New York applied for franchise for erection of plant to manufacture gas and construction of pipe line.

Va., Suffolk—Harness, Saddlery, etc.—P. G. Everett will probably organize Standard Harness Co. to manufacture harness, saddlery and leather goods. (See "Machinery Wanted.")

W. Va., Berkeley Springs—Creamery.—Berkeley Springs Creamery & Evaporating Co. incorporated with \$10,000 capital stock by Thos. W. Norris, W. F. Leary, Chas. H. Rockwell and others.

W. Va., Wheeling—Brewery.—Uneda Brewing Co. awarded contract to William Henry for improvements, including addition to ice plant and increasing brewing capacity.

W. Va., Wellsburg—Glass Insulators.—National Insulator Co. is being organized with \$500,000 capital stock by W. F. Baird, J. E. Inman, C. F. Louthaine and others of Pittsburg, Pa.; to take over plant of Riverside Glass Co. and equip for manufacturing glass insulators.

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, SHEDS, ETC.

Ala., Boyles, P. O. Birmingham.—Louisville & Nashville Railroad, W. H. Courtenay, chief engineer, Louisville, Ky., has filed plans for shops and auxiliary buildings; power-house, 90x110 feet; carpenter shop, 50x200 feet; planing mill, 90x150 feet; boiler shop, 130x170 feet; machine shop, 145x170 feet; paint shop, 50x165 feet; blacksmith shop, 60x170 feet; oilhouse, 50x80 feet; freight shed, 90x350 feet; two-story office building, 80x100 feet; all structures fireproof, of reinforced concrete and steel; estimated cost, \$654,000; Louisville (Ky.) Bridge Co. will furnish structural steel; construction begun on power-house, carpenter shop and planing mill; T. E. Brooks, division superintendent, Birmingham, is in charge. (Recently mentioned.)

Ky., De Coursey (not a postoffice).—Louisville & Nashville Railroad, W. H. Courtenay, chief engineer, Louisville, Ky., will, it is reported, build shops, 50-stall roundhouse and yards.

Mo., Hannibal—Pattern Shops, etc.—Chicago, Burlington & Quincy Railroad, W. L. Breckinridge, engineer maintenance of way, Chicago, Ill., is proceeding with construction of pattern and saw shops recently reported burned; material furnished.

Tenn., Bulls Gap.—Holston Valley Railway, A. F. Willey, general manager, Bristol, Tenn., will, it is reported, erect shops.

ROAD AND STREET WORK

Ala., Birmingham.—City opened bids November 2 for certain grading, macadamizing, curbing, gutter, sidewalk and bituminous binder macadam paving; Maury Nicholson, City Engineer.

Ala., Cullman.—City contemplates construction of several miles of sidewalks; M. L. Robertson, Mayor.

Ala., Montgomery.—City Council adopted ordinance providing for paving Jeff Davis Ave. from Goode St. to Cleveland Ave. with brick, asphalt, bitulith, Blome granitoid block, mineral rubber, wood block, Hassam's granite block or Hassam's compressed concrete; W. A. Ganter, Jr., Mayor.

Ark., Little Rock.—City awarded contract to E. J. Wetterstrom, Chicago, Ill., to pave Main St. from Markham to 19th St. with wooden blocks; cost \$50,000.

Ark., Little Rock.—City awarded contract to M. D. L. Cook of Little Rock at \$40,000 to pave Rock and Scott Sts., from 4th to 15th Sts., distance of 11 blocks on each street, with asphalt concrete.

Fla., Fernandina.—City will pave Center St. from 5th to 11th St. with vitrified brick; G. L. Baltzell, City Clerk. (See "Machinery Wanted.")

Fla., Leesburg.—City will construct 7000 linear feet of concrete sidewalks; bids opened November 4. Address The Mayor.

Ga., Dalton.—City will construct approximately 28,000 square yards of street paving; H. S. Jaudon Engineering Co., Box 582, Savannah, Ga., consulting engineer; Paul B. Trammell, Mayor. (See "Machinery Wanted.")

Fla., West Palm Beach.—City will vote November 6 on issuance of \$4000 of bonds for street improvements. Address The Mayor.

N. C., Asheville.—E. T. Belote of Asheville is lowest bidder at \$1.08 per square yard for laying 1000 yards of cement sidewalks. Address Mr. Belote, care of street committee.

Okla., Enid.—City will improve Buchanan St. from Oklahoma to Market Ave.; bids opened November 3; also construct cement sidewalks in Sawyers University Place Addition and replat University Place Addition; bids opened November 4; E. R. Lee, City Clerk. (See "Machinery Wanted.")

Okla., Oklahoma City.—City will grade 15th, 14th, 13th, 12th and 11th Sts., Indiana, Kentucky and Louisiana Aves., etc.; Henry M. Seales, Mayor.

Okla., Oklahoma City.—City will construct sidewalks in Shillings, College, Cream Ridge, Bell Vern and University additions and McKinley Pl.; also pave with asphalt, grade, etc., McKinley Ave., 35th St., Florida, Kentucky and Walnut Aves., etc.; bids received until November 7; Bob Farman, City Clerk. (See "Machinery Wanted.")

S. C., Greenville.—Bowe & Page, contractors, Charleston, S. C., have begun paving North Main St. with vitrified brick; five-inch concrete foundation in one block has been placed; about 1,250,000 brick will be required to pave entire street.

Tenn., Bristol.—Road committee of Bristol Board of Trade (G. E. Nickels, John N. Huntsman and others) will extend Bristol-Blountville road to Kingsport, Tenn., distance of eight miles.

Tenn., Nashville.—Davidson county will grade road 6226 feet long, beginning near Lickton, in 22d Road District, and extending to Wilkerson Rd.; bids opened; Road Board consists of W. M. Pollard, County Judge; J. H. Lee, Road Commissioner 22d Road District; J. H. Armstrong, Road Commissioner 24th Road District.

Tex., Dallas.—Municipal Commission ordered paving, with Jacksboro rock, of Rawlings St. from Oak Lawn Ave. to Coke St., and Coke St. from Rawlings to Hall St., and instructed J. B. Winslett, City Secretary, to advertise for bids for constructing concrete curb and gutter; Innes Gano of Dallas has contract for grading Rawlings St. from Throckmorton to Coke St.; J. M. Preston, City Engineer.

Tex., Galveston.—City awarded contract to J. A. Gregory, San Antonio, Tex., to pave Tremont St. from county boulevard to Ave. 1½; bid, with five-year maintenance guarantee, was \$1,246.12, and without maintenance guarantee, \$1,196.63. (Previously mentioned.)

Tex., Galveston.—Galveston county will improve seawall boulevard from Ave. 11 to 16th St., approximately 9300 square yards concrete sidewalk, 5400 linear feet concrete curbing and 5500 linear feet of 10-inch retaining curb; bids will be received until November 11; John M. Murch, County Auditor. (See "Machinery Wanted.")

Tex., Seguin.—City awarded contract for paving about 25,000 feet of cement sidewalks. Address The Mayor.

Tex., Temple.—City Engineer will prepare plans and specifications for about three-quarters of a mile of paving on North Main St. and French Ave. Address The Mayor.

Va., Norfolk.—Norfolk & Portsmouth Traction Co., John MacAfee, president, will repave Olney Rd. and Botetourt St., Ghent, between and two feet on either side of its tracks with vitrified brick; width of pavement about 19 feet; company agrees to furnish all material and labor, and city to furnish material for extra concrete base upon which "T" rails to be used are laid; city's portion of cost estimated at \$6000 and traction company's at \$21,000, exclusive of cost of rails.

Va., Norfolk.—Finance committee will recommend to City Council ordinance providing for paving of Bank St. from Freemason to Queen St. with smooth material, and appropriation of \$14,500; also appropriation of \$4500 for laying water mains on street preparatory to paving; W. T. Brooke, City Engineer.

Va., Norfolk.—Sixth and Seventh Ward Local Boards are considering paving of County St.

W. Va., Parkersburg.—Board of Affairs, C. P. Morrison, president, awarded contract to Cornelius Kennedy of Parkersburg at \$658.50

to pave Market St. from 13th to 16th St. with Athens block. (Recently mentioned.)

Va., Petersburg.—City awarded contract to Coleman Contracting Co. of Petersburg at \$1.04 per yard for laying 10,000 yards of cement sidewalk pavement.

SEWER CONSTRUCTION

Ark., Little Rock.—City will construct storm-water sewer in Main St. from 2d St. north to river; bids will be received until November 7; F. M. Oliver, clerk. (See "Machinery Wanted.")

Fla., West Palm Beach.—City will vote November 6 on issuance of about \$6000 of bonds for improvement and extension of sewer system to suburbs, especially to Phillips Addition. Address The Mayor.

Ga., Americus.—City will vote November 8 on issuance of \$30,000 of sewer bonds. Address The Mayor.

Ga., Marietta.—City will vote December 1 on \$15,000 bond issue for extension of sewer system recently noted; J. B. McCrary & Co., Atlanta, Ga., engineers in charge.

La., Lake Charles.—Sewerage Board authorized issuance of \$160,000 of bonds for construction of sewerage system; C. H. Burton, City Engineer. (City previously noted as having voted bonds.)

Md., Baltimore.—R. T. Fendall, City Engineer, has included in estimate for next year \$15,000 additional for construction of sewer in bed of old Liberty Rd., east of Garrison Ave. and connecting with sewer constructed by Alfred M. Quick, Water Engineer, for purpose of diverting drainage from new high-service reservoir.

Md., Baltimore.—Sewerage Commission, Calvin W. Hendrick, chief engineer, 904 American Bldg., will sewer Jones Falls and construct streetway above bed of stream; this to form part of Commission's plans for storm-water sewers in that section; city will vote on issuance of \$1,000,000 of bonds.

Md., Towson.—Baltimore county will construct storm-water sewer on Baltimore St. and Highland and Fairmount Aves.; distance 1800 feet; bids opened November 3; Henry G. Shirley, county roads engineer.

Md., Mt. Washington.—Mt. Washington Sewerage Co. is being organized to construct sewerage system and boulevard from Mt. Washington along Western Run to Pikeville; Western Run now carries sewage from valley as far as Pikeville; proposed to erect disposal plant and construct entire system according to specifications of Sewerage Commission of Baltimore; plan involves draining 8000 acres; estimated expenditure is \$600,000, of which \$300,000 will be issued in bonds; surveys and maps have been under direction of McLean Contracting Co., 902 Maryland Trust Bldg., Baltimore, Md.

N. C., Wilmington.—City contemplates draining Macomber's ditch; C. R. Humphreys, City Engineer, submitted report to Commissioners of Streets showing two routes, one to cost \$43,736.80 and other \$40,540.

Okla., Cherokee.—City will construct sewerage system; A. J. Titus, Mayor.

Okla., Enid.—City will construct about 225 feet of brick storm sewer on Elm Ave., extending from present outfall to point on 3d St., together with junction section leading to north across Elm Ave.; bids will be received until November 4; E. R. Lee, City Clerk. (See "Machinery Wanted.")

Okla., Enid.—City will construct 450 feet of eight-inch vitrified pipe sewer through block S, Dunbarton Heights Addition; bids opened November 2; E. R. Lee, City Clerk.

Okla., Marietta.—City voted issuance of \$30,000 of bonds for construction of sewer system. Address The Mayor.

Tex., Dallas.—Municipal Commission instructed J. B. Winslett, City Secretary, to advertise for bids for laying five-inch sanitary sewer on Oakland Ave. from Texas & New Orleans Railway to block between Grand and Clarence Sts., and on Clarence St. to Houston & Texas Central Railroad; also in alley between Earl and Harrison Sts. to Logan St., and six-inch sanitary sewer in Convent St. from Mill Creek to St. Joseph St.

W. Va., Moundsville.—City will construct sewer system; amount available, \$166,900; date of opening bids not set; J. M. Williamson, Mayor.

Tenn., Jellico.—Water-works and Sewerage Commission, J. A. Hackney, chairman, will expend \$60,000 to \$90,000 to construct sewerage and water-works system; date of opening bids for construction and installation of machinery not set; Walter G. Kirkpatrick, Jackson, Miss., engineer in charge of construction. (Recently noted to have voted \$90,000 bond issue.)

TELEPHONE SYSTEMS

Md., Salisbury.—Bell Telephone Co. will erect telephone exchange to cost \$20,000 and install drop system to cost \$25,000.

Mo., Kansas City.—Kansas City Home Telephone Co., 110-14 East 39th St., will erect addition to telephone exchange; two stories; brick and concrete; cost \$12,000.

N. C., Friendship.—Friendship Telephone Co., Thomas Wakefield, manager, recently reported incorporated with \$5000 capital stock, will construct 30 to 50-mile line, connecting Greensboro, Friendship, Guilford College and Colfax, N. C.; bids opened.

Okla., Calumet.—South Calumet Telephone Co. incorporated by Thos. P. Smith, Frank Homberger, W. F. Ridemont and P. O. McGowan.

TEXTILE MILLS

Ala., Eufaula.—Cotton Cloth.—Glenola Cotton Mills (recently reported incorporated with \$50,000 capital stock) acquires Barbour Cotton Mills, 5800 ring spindles, 148 broad looms, etc.; president, John P. Foy; vice-president, E. P. Thomas; secretary-treasurer, C. A. Covey.

Ga., Lagrange.—Cotton Cloth.—Dunson Mills, lately reported incorporated, has a capital stock of \$250,000 and privilege of increasing to \$1,000,000; J. E. Dunson, W. S. Dunson, J. M. Barnard and F. M. Ridley, principal organizers; W. S. Dunson will be superintendent and assist in purchasing machinery.

La., New Orleans.—Denims, etc.—Lane Cotton Mills Co. chartered with \$300,000 capital stock by Sigmund Odenheimer, Maurice Stern, Harry T. Howard, Charles Godchaux and others; acquires Lane Mills; latter until recently was part of Textile Mills Corporation.

N. C., Concord.—Damask.—Brander Cotton Mills Corporation has increased capital stock from \$60,000 to \$85,000; now has 4000 ring spindles, 40 broad looms, etc.

Tenn., Knoxville.—Woolen Cloth, etc.—Knoxville Woolen Mills will, it is reported, make extensive improvements.

WATER-WORKS

Ga., Americus.—City will vote November 8 on issuance of \$20,000 of bonds for extension of water-works. Address The Mayor.

Ga., Douglasville.—City will vote November 28 on issuance of \$20,000 of bonds for construction of water-works. Address The Mayor.

La., New Iberia.—City will install condenser, steam separator, piping, etc., in water plant; contract awarded. Address The Mayor.

Mo., Granby.—City voted issuance of \$18,000 of bonds for construction of water-works. Address The Mayor.

Okla., Okmulgee.—City will vote November 3 on \$60,000 bond issue for improvements to water-works and \$25,000 bond issue for improvement of creek; T. Jeff Embree, engineer.

Okla., Oklahoma City.—City has engaged Dr. Alexander C. Potter, consulting engineer, New York, to prepare plans for improvement of water-works system; city will vote November 8 on issuance of \$250,000 of bonds. (Further facts recently mentioned.)

S. C., Darlington.—Darlington Water & Electric Co. will install additional machinery in water-works plant, including pumps and boilers; contracts awarded.

Tenn., Jellico.—Water-works and Sewerage Commission, J. A. Hackney, chairman, will expend \$60,000 to \$90,000 to construct water-works and sewer system; date of opening bids for construction and installation of machinery not set; Walter G. Kirkpatrick, Jackson, Miss., recently noted as preparing plans and making surveys.

Tex., Ballinger.—City will expend \$16,000 in construction of stone pump station, extension to water mains and filter plant; no bids; J. A. Kelly, Ballinger, engineer in charge. (Recently noted.)

Tex., Balmorhea.—E. D. Balcom and associates will install water-works system; will need 1500 feet of six-inch and smaller pipe. (See "Machinery Wanted.")

Tex., Bellaire.—P. O. Houston.—Westmoreland Investment Co. will erect water pumping station. (See "Electric-light and Power Plants.")

Tex., Dallas.—City will lay 24-inch water main on Sycamore St. from Grigsby to Peak St., on Peak to Swiss St. and on Swiss to Haskell St.; J. B. Winslett, City Secretary.

Tex., Gainesville.—E. S. Carr, representing Farmers' Loan & Trust Co. of New York, purchased Gainesville water-works for \$75,000; city will probably call election to vote on issuance of bonds to take over plant from purchasers. Address The Mayor.

Tex., Hearne.—City has engaged O'Neil Engineering Co., Dallas, Tex., to prepare plans for water-works; cost \$20,000; M. C. Erwin, engineer in charge. (Recently noted to vote November 23 on bond issue.)

Tex., Maxwell.—City has arranged for construction of water-works. Address The Mayor.

Va., Dante.—Cinchfield Coal Corporation, Spartanburg, S. C., and 24 Broad St., New York, appropriated \$50,000 to purchase and lay eight miles iron pipe for conveying water from Clinch River to mines; also plans constructing condensing tanks to return exhaust steam to boilers; reported contracts have been awarded. (Recently mentioned.)

Va., Norfolk.—Finance committee will recommend to City Council appropriation of \$4500 for laying water mains on Bank St. preparatory to paving (see "Road and Street Work") and appropriation of \$11,500 for purchase of dredging machine and dredging of canal from Little Creek to Lake Bradford, so as to increase water supply; W. T. Brooke, City Engineer.

Va., Norfolk.—Board of Control will receive bids until November 19 for design, furnishing and installing three electrically-driven centrifugal pumps at Colley Ave. sewer pumping station; W. T. Brooke, City Engineer. (See "Machinery Wanted.")

W. Va., Parkersburg.—Board of Affairs, C. P. Morrison, president, awarded following contracts in connection with construction of water-works: W. M. Chishold & Son at \$11,000 for building pump station and at \$5623 for laying water mains; Alphons Custodi's Chimney Construction Co. of New York at \$1325 for construction of radial brick chimney and to United States Cast Iron Pipe & Foundry Co. of New York at \$15,831 for furnishing cast-iron water pipe and special castings; contract for valves and hydrants will be awarded later. (Recently mentioned.)

WOODWORKING PLANTS

Ala., Anniston.—Heading.—Lubin Manufacturing Co., recently reported incorporated (under "Miscellaneous Factories") with \$19,000 capital stock, will operate plant to manufacture pine heading; daily capacity, 11,600 sets; W. H. McElroy, president; M. D. Lubin, treasurer.

Ark., Little Rock.—Baskets.—George Clements is reorganizing company with \$10,000 capital stock to rebuild burned basket factory; expend \$4000 to purchase veneering machinery and build plant; manufacture baskets and boxes for shipping and display of fruits, berries and vegetables.

Ark., Little Rock.—Furniture.—Archer Furniture Co. incorporated with \$15,000 capital stock by T. L. Davis, H. E. William, A. Dickey, C. O. Huber and others.

Ky., Georgetown.—Boxes, etc.—Penn Lumber Co. will construct box and tobacco hogshead factory.

Miss., Greenville.—Staves.—Business Men's League, J. L. Strickland, president, is promoting establishment of stove factory.

S. C., Cheraw.—Doors, etc.—Cheraw Sash & Door Co. incorporated with \$15,000 capital stock; G. W. Duvall, president; R. T. Coston, vice-president; J. A. Sprull, secretary-treasurer.

Tenn., Greenville.—Furniture.—Greenville Furniture Co. will increase capital stock from \$15,000 to \$30,000.

Tenn., Greenville.—Chairs.—Greenville Chair Manufacturing Co. will erect chair factory; capital stock \$15,000; will be operated by F. P. Moor & Sons of Lenoir, N. C.

Va., Winchester.—Barrels.—Virginia Barrel Corporation will erect addition and double capacity of barrel factory; contract for construction will soon be awarded.

Va., Richmond.—Wagons.—J. A. Grasberger is organizing company with \$100,000 capital stock for extending wagon factory repair shop and addition of automobile repair shop.

BURNED

Ala., Eufaula.—Felix and Robert Rood's cotton gin near Eufaula.

Ark., Camden.—McDonald & Co.'s store; loss \$5000.

Ark., Heth.—Bird & Morrison's cotton gin; loss \$4000.

Ark., Little Rock.—Residence of Carl Voss of Voss-Barbee Manufacturing Co.; loss \$20,000.

Ark., Mt. Olive.—Mt. Olive Stave Co.'s stave mill.

Ark., Prescott.—Creeson Opera-house Block; loss on building, owned by F. E. Butler of Jacksonville, Tex., \$12,000.

D. C., Washington.—F. W. Schrupf & Co.'s warehouse at 14th B St. N. W.; estimated loss on building \$10,000.

Fla., Pensacola.—A. V. Cubbs, dwelling on Cervantes; loss \$5000.

Ga., Blakely.—Ginning plant of Georgia Cotton Oil Co., branch of American Cotton Oil Co., 27 Beaver St., New York; loss \$12,000.

Ga., Milledgeville.—Main building of State prison farm; estimated loss, \$30,000. Address The Superintendent.

Ga., Bowman.—Teasley & Sons' store; loss \$9000.

Ga., Norman Park.—K. W. Horn's building, loss \$4500; A. W. Patterson's mercantile building, loss \$7500; A. Kurlbus' store, loss \$7500.

Ga., Savannah.—Daniel Hogan's store at Broughton and Barnard Sts.; loss \$70,000.

Ky., Georgetown.—James Briscoe's residence, occupied by John Lowe; loss \$4000.

Md., Chantolance.—C. Baker Clotworthy's residence; loss \$8000.

Miss., Aberdeen.—A. J. Wilson's syrup mill; loss \$1000.

Miss., Jackson.—Dormitory of Belhaven Seminary; loss \$50,000.

Miss., Meridian.—Meridian Fertilizer Co.'s oil mill; loss \$75,000.

Miss., Summit.—Godbold Mineral Wells Hotel, hall, three cottages, etc.; loss \$25,000 to \$30,000.

Mo., Excelsior Springs.—New Elms Hotel; loss \$200,000.

N. C., Asheville.—East wing of Victoria Inn; loss \$5000.

N. C., Durham.—Durham Lumber Co.'s sawmill; estimated loss \$15,000.

N. C., Leechville.—Sawmill, drykilns, sheds, etc., owned by J. E. Wilkinson, Belhaven, N. C., and operated by W. H. Wilkinson of Leechville; estimated loss, \$8000.

N. C., Newbern.—Norfolk & Southern Railroad's freight depot; F. L. Nicholson, chief engineer, Norfolk, Va.

N. C., University.—University High School building. Address Orange County Commissioners, Hillsboro, N. C.

N. C., Weldon.—Wyche Bounds Company's store; loss \$15,000.

Okla., Crescent.—A. H. Davis' cotton gin.

Okla., Elmer.—Henry Kimball's cotton gin; loss \$12,000.

Okla., El Reno.—El Reno Vitriol Brick & Tile Co.'s drying-room damaged; loss \$8000 to \$10,000.

Okla., Forum.—J. H. Rosenbaum's cotton gin; loss \$30,000.

Okla., Oklahoma City.—Scott-Foster Company's cotton gin.

S. C., Charleston.—Atlantic Coast Line Railroad's warehouse; E. B. Pleasants, chief engineer, Wilmington, N. C.

S. C., Cross Anchor.—M. C. Poole's store; loss \$18,000 to \$20,000.

Tenn., Bristol.—W. W. Pendleton's residence; loss \$5000.

Tenn., Mt. Pleasant.—First National Bank building, containing bank, opera-house, etc., estimated loss \$40,000; C. D. Reginald's residence.

Tenn., Henderson.—W. J. Freeman's cotton gin.

Tenn., Mt. Pleasant.—C. B. Reginald's residence; First National Bank Building; total loss \$50,000.

Tenn., Tullahoma.—Tullahoma Tanning Co.'s plant damaged; loss \$3000.

Tex., Bonham.—Cumberland Presbyterian Church building; estimated loss \$25,000. Address The Pastor, Cumberland Presbyterian Church.

Tex., Calvert.—City hall; estimated loss, \$50,000; Seth Burnett, Mayor.

Tex., Fort Worth.—Storage building owned by H. F. Gause and occupied by Coon Storage & Furniture Co.; loss on building about \$30,000.

Tex., Greenville.—Mrs. Lizzie Mitchell's building, loss \$6000; Mrs. B. V. Samuel's building, loss \$6000; J. M. Gee's building, loss \$6000; J. W. Mackin's building, loss \$2500; Graham Bros.' building, loss \$2500.

Tex., Houston.—Merchants & Planters' Oil Co.'s main building; loss \$25,000.

Tex., Karnes City.—Tewes & Richter's cotton gin; loss \$18,000.

Tex., Quanah.—Panhandle Garage & Sales Co.'s building, owned by F. D. Hendrix; loss \$15,000.

Tex., Marble Falls.—Dabb Baking Co.'s plant; loss \$1250.

Tex., Palestine.—Palestine Ice, Fuel & Gin Co.'s cotton gin.

Tex., Rosenberg.—Rosenberg Mill & Elevator Co.'s plant damaged.

Tex., Steele Store.—Carlos Salvato's cotton gin.

Tex., Van Alstyne.—McKinney & Morris' cotton gin; loss \$10,000.

Va., Warrenton.—St. James' Protestant Episcopal Church and rectory; S. W. Hilbert's garage and carriage-house; Kirby building, occupied by B. F. Martin Printing Co.; Walter Thomas Hotel; total loss \$40,000.

Va., Warrenton.—St. James' Episcopal Church building and parish-house, estimated loss \$20,000; F. W. Hilbert's stable and carriage repository.

W. Va., Buckhannon.—Buckhannon Light & Water Co.'s ice plant, loss \$20,000; electric light plant and water-works damaged.

W. Va., Cabell.—Foundry and machine plant operated by Chris and William MacTaggart, I. C. Prince and T. H. Wickham, all of Beckley, W. Va.; Edward Carper's store building.

W. Va., Belington.—Belington Ice and Bottling Works; loss \$60,000.

BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

D. C., Washington.—E. T. Crismond, 722 E St. N. W., has plans by A. H. Beers, 1342 New York Ave. N. W., Washington, for apartment-house at 124 Q St. N. W.; two stories; cost \$3000.

Fla., Jacksonville.—J. F. Ellenburg has plans by Jack Bauman of Jacksonville for apartment-house; frame; two stories; four apartments on each floor.

Fla., Jacksonville.—John L. Doggett will erect two-story frame apartment-house 30x50 feet; cost \$3500.

Ga., Atlanta.—J. H. George has plans by Leila Ross Wilburn, 305 Peters Bldg., Atlanta, for two-family apartment building; gravel roof; electric lighting; cost \$4000; construction by owner.

Ky., Louisville.—William Reesor plans erection of two apartment-houses of about six apartments each; three stories; brick and stone; cost \$70,000.

Md., Baltimore.—John J. Carlin, 215 St. Paul St., is having plans prepared by Stanislaus Russell, Clifton Ave. and 7th St., Baltimore, for apartment-house on Elgin Ave.; two stories; brick; stone trimmings; 50x70 feet; hardwood floors; electric lights; steam heat; cost \$25,000.

Mo., St. Louis.—Leslie N. Foster will erect four and five-room apartment-house.

Tex., Houston.—Lamb-McAshan Company organized with E. C. Lamb, Binz Bldg., president; S. E. McAshan, vice-president; R. E. Field, secretary; will erect apartment-house; 100x44 feet; eight stories and basement; two apartments on each floor; private baths in every room; double elevator service; tile floors, bathrooms and wainscoting; cost \$90,000; plans in progress by Mr. Lamb.

Okla., Oklahoma City.—Geo. De Camp will erect two-story frame apartment-houses; cost \$2500.

ASSOCIATION AND FRATERNAL

Ga., Macon.—Young Men's Christian Association will erect building; four stories and basement; 75x125 feet; ornamental brick front; Georgia marble trimmings; gravel roof; steam heat; electric lights; swimming pool 50x20 feet; double bowling alleys; running track in gymnasium 28 laps to the mile; elevator; plans by Alexander Blair, Macon; cost \$75,000; construction begun. (Previously noted.)

La., Lake Charles.—Woodmen of the World plan erection of lodge building.

Miss., Philadelphia.—Ancient Free and Accepted Masons will erect Masonic Temple; 90 square feet ground space.

Tenn., Memphis.—Benevolent Protective Order of Elks, Memphis Lodge No. 27, John J. Mason, exalted ruler, plans erection of two additional stories and roof garden; cost \$30,000 to \$40,000.

Tex., Corsicana.—Independent Order of Odd Fellows plans expending \$3000 for improvements, including erection of slaughter-house and cistern; C. B. Sutherland, E. A. Johnson, both of Corsicana, and W. H. Wray of Dallas, Tex., building committee.

Tex., Marshall.—Ancient Free and Accepted Masons will erect temple; site 60x120 feet.

BANK AND OFFICE

Ark., Prescott.—Scott Bros. will erect office and business building; two stories; brick.

Fla., Miami.—Bank of Bay Biscayne has plans by George L. Pfeiffer, Lemon City, Fla., for store and office building; first floor, stores; second floor, office; reinforced concrete; cost \$23,000.

Fla., Newberry.—Bank of Newberry will erect brick and stone bank building; the bank and W. B. Comp. architect, Jacksonville, Fla., will receive bids until November 26; plans can be obtained from bank upon deposit of \$20.

Ga., Americus.—Commercial City Bank,

Crawford Whealey, vice-president, will erect four-story bank and office building.

Tex., Lexington.—Lee County State Bank will expend \$2000 to erect 26x50-foot bank building; ordinary construction. (Recently noted.)

Tex., Lytle.—Lytle State Bank will erect 30x50-foot bank building; brick; cost \$2500.

Tex., San Benito.—First State Bank will erect bank building.

Tex., Silver City.—R. P. Christian will expend \$9000 to erect bank and office building recently noted; 50x80 feet; ordinary construction; brick; concrete foundation; plans by W. Tharp, Sr., South Houston, Tex. (See "Machinery Wanted.")

CHURCHES

Ala., Dadeville.—Methodist congregation contemplates erecting additions to and remodeling church building; cost \$6000 to \$8000; wants plans submitted; present building of wood and veneered brick; C. E. Oliver, chairman of building committee.

Ga., Atlanta.—Ponce De Leon Avenue Baptist congregation will erect Sunday-school building; \$12,000 available. Address The Pastor, Ponce De Leon Avenue Baptist Church.

Md., Baltimore.—Bethany English Lutheran Church, Rev. Luther F. Miller, pastor, has plans by G. Bernard Lohmuller, 1908 Bank St., Baltimore, for edifice at Lakewood Ave. and Madison St.; one story; frame and stucco; stone foundation, 30x55 feet; gas and probably electric lighting; hot-air heat; asbestos shingles; cost \$5000.

Md., Rockdale, R. F. D. from Pikesville.—St. James Evangelical Lutheran congregation purchased site on Liberty Rd. on which to erect edifice. Address The Pastor, St. James Evangelical Lutheran Church.

S. C., Clemson College.—Baptist Church, Rev. T. V. McCaul, pastor, will erect edifice to cost \$15,000.

Tex., Corpus Christi.—Methodist congregation will erect \$10,000 edifice. Address The Pastor, Methodist Church.

Tex., El Paso.—Congregationalist Church, Rev. Miles Hanson, pastor, contemplates erecting edifice.

CITY AND COUNTY

D. C., Washington.—Engine-house.—Cuno H. Rudolph, John A. Johnston and Wm. V. Judson, Commissioners, D. C., will receive bids until November 8 for erection of engine-house at Pennsylvania Ave. and 28th Pl. S. E.; plans, specifications, etc., at office of chief clerk, Engineering Department, 427 District Bldg.; plans by Averill & Adams, Union Trust Bldg., Washington.

Fla., Miami.—County Farm.—Dade County Commissioners awarded contract at \$1975 to John Muller for erection of six buildings on county poor farm; reinforced concrete.

Fla., Tampa.—Fire Station.—Commissioners of Public Works have plans by F. M. Curtis, Tampa, for proposed central fire station; two stories; 60x100 feet; lower floor concrete; cost \$10,000 to \$12,000.

Ga., Atlanta.—Hospital.—Bids will be received at office of King & Walker, 99 North Forsyth St., Atlanta, until November 12 for erection of Grady Hospital building; separate bids for heating and ventilating, plumbing and electrical installations; certified check for 2 per cent. amount of bid; plans and specifications at office of architects as above, or may be had on deposit of \$25; Jos. Hirsch, president trustees Grady Hospital. (Previously noted.)

La., New Orleans.—John Minot, New Orleans, is lowest bidder at \$14,075 for erection of engine-house on Louisiana Ave., between Delachaise, Liberty and Howard Sts.; plans by E. A. Christy, New Orleans. (Previously noted.)

Md., Baltimore.—Bath.—P. J. Cushen, 213 Courtland St., Baltimore, is lowest bidder at

\$13,644 for erection of city bathhouse at Monument St., Harford and Greenmount Aves.; plans by Archer & Allen, Central Savings Bank Bldg., Baltimore; will probably call for revised bids. (Recently described.)

Md., Cumberland—City Hall.—City will expend \$89,500 to erect city hall recently noted; 70x85 feet; fireproof construction; terra-cotta and stone; concrete pile foundation; ornamental-iron work; direct steam heat; date of opening bids not set; plans by Holmboe & Lafferty, Clarksburg, W. Va.

Okla., Enid.—Jail.—City Clerk E. R. Lee will receive bids until November 4 for erection of jail; two stories; brick; concrete floors; asbestos shingles; certified check for \$300.

Tex., Nacogdoches.—Jail.—Nacogdoches county contemplates issuing \$25,000 of bonds for erection of jail and \$75,000 for courthouse. Address County Commissioners.

Va., Harrisonburg.—Hospital.—Town Council authorized issuance of 20,000 of bonds to erect hospital.

W. Va., Huntington.—City Hall, Market, Fire Station.—City plans erection of central fire station, market and municipal building. Address The Mayor. (Previously noted.)

COURTHOUSES

Tex., Nacogdoches.—Nacogdoches county contemplates issuing \$75,000 of bonds for erection of courthouse and \$25,000 of bonds for jail. Address County Commissioners.

W. Va., Moorefield.—Hardy county contemplates voting on \$12,000 bond issue to rebuild courthouse. Address County Commissioners.

DWELLINGS

Ala., Ashland.—Ashland Baptist Church will erect parsonage. Address The Pastor, Ashland Baptist Church.

Ark., Little Rock.—Jas. A. Smith will erect two-story brick dwelling; cost \$6550.

Ark., Little Rock.—Carl Voss, president of Voss Barber Company, 2230 High St., will rebuild residence reported burned; loss \$20,000.

D. C., Washington.—John T. Money, 219a P St. N. W., will erect two-story dwelling at 18 Quincy Pl. N. E.; cost \$1200; plans and construction by owner.

Fla., Jacksonville.—E. A. Kinney will erect two one-story frame dwellings; cost \$4000; size 22x37 feet; mill construction; lighting plant to cost \$50; plans by owner.

Fla., Jacksonville.—A. B. Potter will erect two-story frame dwelling; cost \$4000.

Fla., Jacksonville.—Brown Realty Co. will erect two-story frame dwelling; cost \$2500.

Fla., Jacksonville.—James H. Stanley will erect four two-story frame dwellings; cost \$8000.

Fla., Jacksonville.—Miss F. Arpen will erect two-story frame dwelling; cost \$3000.

Fla., Jacksonville.—J. B. Cox will erect two-story frame dwelling; cost \$2500.

Fla., Miami.—J. H. Tatum & Co. will erect 15 dwellings in Riverside.

Ga., Atlanta.—J. W. Boone will erect dwelling; eight rooms; ordinary construction; hot-air heat; electric lighting; plans by W. A. Brightwell, Atlanta; day's labor; cost \$5000.

Ga., Atlanta.—T. C. Wesley has plans by Leila Ross Wilburn, 305 Peters Bldg., Atlanta, for two dwellings; eight rooms; two stories; brick veneer; shingle roof; electric lighting; cost \$1500; construction by owner.

Ga., Atlanta.—John T. Clarke has plans by Leila Ross Wilburn, 305 Peters Bldg., Atlanta, for dwelling; two stories; seven rooms; stone foundation; frame; furnace; electric lighting; cost \$3500.

Ga., Atlanta.—R. S. Morris has plans by Leila Ross Wilburn, 305 Peters Bldg., Atlanta, for two one-story frame bungalows; stone foundation; shingle roof; one to contain seven rooms; the other six rooms; electric lighting; furnace heat; cost \$3000 and \$2000, respectively.

Ga., Dublin.—J. H. Holcomb has had plans prepared for residence.

Ga., Dublin.—Ira S. Chappell will erect residence; cost \$4500 to \$6000; plans prepared.

Ga., Dublin.—A. J. Toole has had plans prepared for residence.

Ga., Dublin.—Dr. Frank Bright will erect residence; plans prepared.

Ga., Dublin.—W. S. Ehney, Jr., will erect residence.

Ky., Louisville.—Addison R. Smith will erect dwelling; two and a half stories; ornamental brick; stone trimmings; cost \$11,000.

Ky., Louisville.—Wible Mapother will erect residence; two and a half stories; ornamental brick; stone trimmings; cost \$12,300.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

La., New Orleans.—Mrs. M. G. Bulger will erect single frame cottage; cost \$5000.

La., New Orleans.—W. Feldmann will erect four double two-story dwellings; cost \$2000.

Md., Baltimore.—Frederick Denhard, Light and West Sts., will erect residence on Main Ave. near Grenada Ave.

Md., Baltimore.—Charles E. Litzinger, 922 38th St., has plans by F. E. Beall, 213 St. Paul St., Baltimore, for 18 dwellings on Wilson St.; two stories; 12x28 feet; slag roofs; stoves; cost \$12,000.

Md., Baltimore.—John S. Muth, 23 South Charles St., has plans by Mottu & White, 322 North Charles St., for frame 2½-story cottage at Roslyn and Piedmont Aves.; 3x35 feet; bids opened November 5; contractors estimating are A. Boteler, 1223 Myrtle Ave.; W. E. Harn, 2700 Huntington Ave.; I. Smith, 3001 Woodwood Ave.; Gladfelter & Chambers, 2072 Woodberry Ave.; J. J. O'Connor, 427 East Lexington St.; all of Baltimore.

Md., Baltimore.—David Garrett has plans by Felix McGinley, 827 East Chase St., Baltimore, for 11 dwellings on Gouldin St., near Toone St.; two stories; brick; construction by owner.

Md., Baltimore.—Provident Realty Corporation, Garrison and Piedmont Aves., has plans by Henry J. Tinley, 314 North Charles St., Baltimore, for dwelling on Elsinor Ave.; two and a half stories; frame; 26x30 feet; slate roof; steam heat; cost \$3500; construction by owner. (Previously noted.)

Md., Baltimore.—J. Olney Norris, Chamber of Commerce, has plans by Chas. E. Cassell, Law Bldg., Baltimore, for remodeling residence and erecting addition in rear of 1224 Madison Ave.; three stories; brick; 31x35 feet.

Md., Baltimore.—John F. Carter, Westwood and Braddish Aves., has plans by Stanislaus Russell, Clifton Ave. and 7th St., for four two-story dwellings on Westwood Ave.; 13 feet 3 inches by 42 feet; tin roofs; hot-air heat; cost \$4000.

Md., Baltimore.—Harry F. Waldner of Henderson, Linticum & Co., 3 East Camden St., will erect residence at Ten Hills.

Md., Baltimore.—W. H. Harker has plans by Jacob F. Gerwig, 210 East Lexington St., Baltimore, for eight two-story dwellings on Little Waters Court; cost \$16,000 each.

Md., Baltimore.—Garrison Lumber & Supply Co. will expend \$20,000 to erect 10 dwellings; 20x37 feet each; two and a half stories; steam heat; gas and electric lighting; plans by F. E. Beall, 213 St. Paul St., Baltimore; construction by company.

Md., Baltimore.—L. Kable will expend \$5500 to erect dwelling recently noted; 28x35 feet; ordinary construction; frame; steam heat; gas and electric lighting; plans by H. J. Tinley, 314 North Charles St., Baltimore.

Md., Mt. Washington.—Geo. H. Trout will expend \$4000 for improvements to residence on Linwood Rd.

Md., Towson.—William R. Ruse is having plans prepared by Jacob F. Gerwig, 210 East Lexington St., Baltimore, Md., for cottage at Alghurth Park; two and a half stories; frame; asbestos shingle roof; hot-water heat; electric and gas lights.

Md., Roland Park.—J. C. Carroll, National Marine Bank, Baltimore, Md., has plans by E. L. Palmer, 112 Elmhurst Rd., Roland Park, for residence; frame; two and a half stories; cost \$10,000; Roland Park Co., 408 Roland Ave., Roland Park, is bidding on construction.

N. C., Whiteville.—H. R. Powell awarded contract to J. E. Thompson of Hallsboro, N. C., for erection of residence; 12 rooms.

N. C., Winston-Salem.—H. G. Chatham will erect dwelling.

Okl., Oklahoma City.—Olive Buchanan will erect two-story frame dwelling; cost \$3000.

S. C., Bamberg.—John F. Folk will erect 12 dwellings. (See "Machinery Wanted.")

Tenn., Knoxville.—Dr. H. J. Cook will erect residence on Circle Park.

Tenn., Memphis.—W. O. Rainey has plans by Southern Improvement Co., Memphis, for rebuilding dwelling recently reported burned; eight rooms and bath; hot air heat; electric lighting; cost \$4500; bids opened November 1. (See "Machinery Wanted.")

Tex., Dallas.—Leo Levi will erect \$10,000 residence.

Tex., San Antonio.—San Antonio Land & Building Co. (recently reported incorporated under "Land Developments") organized with \$50,000 capital stock; R. A. Richey, president; L. A. Casey, secretary-treasurer; will purchase sites and erect dwellings.

Va., Lynchburg.—Mrs. A. F. Bowen will erect residence; frame; slag roof; cost \$3800.

Va., Norfolk.—T. B. Dey will erect resi-

dence; three stories; brick; colonial style; 10 rooms; cost \$5000; construction begun.

Va., Norfolk.—E. K. Wilson will erect residence; colonial style; brick and shingles; nine rooms; cost \$1500; construction begun.

Va., Norfolk.—L. P. Sneed will erect brick and shingle cottage; cost \$3000; construction begun.

Va., Richmond.—John J. and Annie R. Steinbrecher will erect two-story brick tenement-house; cost \$2500.

Va., Richmond.—H. P. Argie will erect detached frame dwelling; two stories; cost \$2400.

Va., Richmond.—L. W. Pizzini, 329 North Harrison St., has engaged J. J. Tignor, 1625 West Main St., Richmond, to supervise construction of dwelling recently noted; 86 feet wide; ordinary construction; concrete foundation; cobblestones in cement to second floor; flat tile roof; hot-water heat; electric lighting; plans by C. K. Howell, 723 East Main St., Richmond.

Va., Richmond.—D. and A. Moschetti will erect brick store and dwelling; two stories; cost \$9000.

Va., Staunton.—J. J. Flavin will erect 30x40-foot dwelling; ordinary construction; cost \$3000; previously noted. (See "Machinery Wanted.")

GOVERNMENT AND STATE

Okl., Guthrie.—Executive Mansion.—State Capitol Commission, Tate Brady, chairman, accepted plans by Layton, Smith & Hawk, Oklahoma City, Okla., for executive mansion; two stories; 14 rooms; cost \$25,000. (Recently mentioned.)

Ga., Milledgeville.—Government will rebuild main building of State Prison Farm, reported burned at estimated loss of \$30,000; new structure will be of concrete; fireproof. Address Gen. Clement A. Evans of State Prison Commission.

HOTELS

Ala., Decatur.—W. R. Hughes of Pulaski, Tenn., leased New Windsor Hotel and will make improvements, probably including erection of additional story.

Fla., Daytona.—H. and L. J. S. Dohm will erect brick hotel.

Fla., Lakeland.—J. L. Tallevast, proprietor of Hillsborough Hotel, Tampa, Fla., will erect hotel; three stories and 10-foot basement; cost \$65,000 to \$70,000.

Fla., Sarasota.—Bell Haven Inn Co. will make improvements to hotel, including installation of steam-heating plant; cost \$20,000.

Mo., St. Louis.—Clark-Carrier Hotel Co. incorporated with \$20,000 capital stock by Harry M. Carder, Bertram T. Clark, Corrine W. Clark and others.

S. C., Columbia.—William Weston, Henry Holbeck and others contemplate, it is reported, erection of \$250,000 hotel.

N. C., Burgaw.—W. N. Rivenbark will erect hotel; electric lights, etc.

Tenn., Chattanooga.—E. M. Prigmore will erect hotel; three or four stories; 50 or 75 rooms; 50x150 feet; buff brick; stone trimmings; concrete and stone foundation; steam heat; cost \$35,000 to \$40,000.

Tex., Aransas Pass.—Commercial Club is promoting organization of company to erect three-story fireproof brick hotel; cost \$10,000.

Tex., Bastrop.—W. H. Grimes is reported to erect hotel.

Va., Richmond.—H. S. Wallerstein will erect hotel at Grace and 8th Sts.; four stories; 40 to 50 rooms; site 57x67 feet.

W. Va., Charleston.—Ruffner Bros. will erect six-story building; first story for store, upper floors for bathrooms, for Ruffner Hotel adjoining.

MISCELLANEOUS

Md., Hagerstown.—Hospital.—Charles J. Cassidy Company, 523 13th St. N. W., Washington, D. C., has submitted bid on erection of hospital for Washington County Hospital Association; structure will be of fireproof construction; brick and stucco; two and three stories; 180x70 feet and 47x32 feet, respectively; to accommodate 50 to 60 patients; gas and electric lighting (two dynamos); elevator; estimated cost \$50,000; plans by James H. Ritchie, 8 Beacon St., Boston, Mass.; bids will be received by architect until November 15. (Previously mentioned.)

N. C., Weaverville.—Dr. J. N. Gill of Weaverville; Dr. F. T. Merriweather, Dr. H. H. Briggs, Thomas A. Jones, all of Asheville, N. C., and others are promoting organization of sanitarium with \$25,000 capital stock; site 40 acres; propose to erect three-story brick administration building with about 40

bedrooms; steam heat and electric lights; ultimate plan is to erect cottages surrounding main building; bids will soon be invited.

Tenn., Nashville.—Hospital.—Galloway Memorial Hospital, Percy D. Maddin, chairman committee, will erect building to cost about \$250,000.

Va., Dante.—Hospital.—Clinchfield Coal Corporation, Spartanburg, S. C., and 24 Broad St., New York, will erect miners' accident hospital; cost \$25,000; construction begun. (Recently mentioned.)

Va., Norfolk.—Business Block.—Meredith S. Spratley will erect business block to cost about \$150,000.

Va., Richmond.—Battle Abbey.—Confederate Memorial Association, J. Taylor Ellyson, president, selected 87 architects to prepare plans and specifications for Battle Abbey; plans, etc., to be filed by December 22 with David C. Richardson, Mayor; architect whose plans are accepted will have supervision of construction; architect second in competition receives \$400, and next three architects \$200 each; cost of building limited to \$150,000. (Previously mentioned.)

RAILWAY STATIONS

Ala., Birmingham.—Louisville & Nashville Railroad, T. E. Brooks, superintendent, has plans for remodeling passenger station; floors in waiting-rooms to be of mosaic tiling; marble interior work; estimated cost \$35,000.

Fla., Clearwater.—Atlantic Coast Line Railroad, E. B. Pleasants, chief engineer, Wilmington, N. C., will, it is reported, erect depot to cost \$10,000.

Fla., Tampa.—King Lumber Co., Charlottesville, Va., is lowest bidder at \$27,700 for erection of union station for Tampa Union Station Co., C. H. Hix, president; bid is for erection of depot and concourse proper, train shed, tracks and Southern Express Co.'s office building being separate; tracks and shed are to be constructed by company's employees and express building erected by separate contract at cost of \$25,000; depot will be two stories, 80x130 feet, and one story, 60x200 feet; tapestry brick and Indiana limestone with terra-cotta trimmings; waiting-rooms, mailroom, etc., to have terra-cotta floors and wainscoting; eight offices on second floor; train shed is to be 504 feet long and contain eight tracks; between train shed and station will be concourse 133x50 feet, laid with tile and have tile roof; reported that total expenditure will be \$275,000; plans by J. F. Leitner, Wilmington, N. C. (Recently mentioned.)

Ky., Versailles.—Central Kentucky Traction Co., Frankfort, Ky., is considering, it is reported, erection of depot.

N. C., Statesville.—Southern Railway, T. H. Gatlin, manager maintenance of way, Knoxville, Tenn., has plans, it is reported, for passenger station; 40x108 feet, with open concourse shed 25x40 feet; pressed brick; stone trimmings; tile roof; white waiting-room, 36x28 feet, with seating capacity of 100.

Tenn., Memphis.—Illinois Central Railroad, A. S. Baldwin, chief engineer, Chicago, Ill.; Yazoo & Mississippi Valley Railroad, W. S. King, general superintendent, Memphis; St. Louis & San Francisco Railroad, M. C. Ryers, chief engineer, St. Louis, Mo., and Chicago, Rock Island & Pacific Railway, J. B. Berry, chief engineer, Chicago, Ill., will, it is reported, erect union passenger station to cost \$1,000,000; Mr. Baldwin telegraphs "report is in error as to passenger station having been authorized at Memphis."

Tenn., Morristown.—Southern Railway, T. H. Gatlin, engineer maintenance of way, Knoxville, Tenn., will, it is reported, erect depot; brick; 40x100 feet.

SCHOOLS

Ala., Birmingham.—Sisters of the Holy Child, Philadelphia, Pa., plan erection of \$100,000 convent school in Shades Valley.

Ark., Little Rock.—New Baptist State College, M. P. Matheny, president, has plans by C. L. Thompson, Little Rock, for college buildings recently noted; main building to be 50x150 feet; two stories and basement; two wings to dormitories 40x100 feet, three stories; ordinary construction; pressed brick and stone; heating and lighting not decided; cost \$60,000; date of opening bids not set. (See "Machinery Wanted.")

D. C., Washington.—Board of Education, Franklin School, K and 13th Sts. N. W., is having plans prepared by Snowden Ashford, 1719 Riggs Pl. N. W., Washington, for Normal School at 11th and Harvard Sts. N. W.; cost, including grounds, over \$250,000.

Ky., Louisville.—Jefferson county will vote November 8 on \$500,000 bond issue to establish consolidated chain of rural schools to supplant small district schools. Address County Commissioners.

La., Franklinton.—City will award contract at \$12,300 to J. O. Edgar for erection of high-school building; two stories; brick; 10 rooms; auditorium to seat 400 people.

La., Ruston.—Louisiana Industrial Institute will make improvements, including erection of domestic science and art building to cost \$20,000, \$5000 president's cottage, remodeling mechanical arts building, improving main building, installation of lighting and power plant, equipping machines in shops with individual motors and heating some of buildings with exhaust steam from engine.

Miss., Ellisville.—City plans \$10,000 bond issue for agricultural high school recently noted; J. F. Taylor, Mayor.

Mo., St. Louis.—Board of Education is having plans prepared by Wm. B. Ittner, 911 Locust St., St. Louis, for Harney Heights school building; 24 classrooms; fireproof construction; reinforced concrete and brick; proposal blanks on application to Hans C. Toensfeldt, Commissioner of School Buildings, care of Board of Education; cost of building \$100,000; cost of heating plant \$20,000.

N. C., Greensboro.—Board of Education, C. H. Ireland, chairman, will expend \$25,000 to erect high-school building recently noted; 60x120 feet; heating plant to cost \$3000; plans by Hook & Rodgers, Charlotte, N. C.; bids opened November 10.

Okl., Oklahoma City.—Oklahoma Holiness College will expend \$150,000 to erect college building recently noted; 172x130 feet; fireproof construction; direct and indirect steam vacuum heat; lighting not decided; plans by Bailey & Bailey, Oklahoma City; date of opening bids not set.

S. C., Bennettsville.—School Trustees rejected all bids for erection of school building previously noted; will ask for new bids on modified plans; structure to be 60x100 feet; eight classrooms, office, library, laboratory, etc.; pressed brick, fan blast of heating; electric lighting; cost \$30,000; plans by Sayre & Baldwin, Anderson, S. C. Address architects.

Tenn., Memphis.—Bolton College plans erection of dormitory, several outbuildings and barn, and establishment of experimental farm and agricultural chemical laboratory.

Tex., Lyford.—Lyford Independent school district voted \$5000 bond issue to erect school; brick construction. Address District School Trustees.

Tex., Palestine.—School Trustees, C. A. Sterns, secretary, will erect two additions to school buildings; brick; cost \$4000 and \$8000, respectively. (Recently noted.)

Va., Richmond.—Southern Benedictine College is planning to erect main building to cost \$60,000. (Previously mentioned.)

W. Va., Weston.—Weston District Board of Education will receive bids until November 9 for erection of Central high-school building; two stories; brick; certified check for 1 per cent. amount of bid; plans and specifications at office of C. F. Allen, architect, Buchanan, W. Va., or at Standard Hardware Co.'s store at Weston.

STORES

Ark., Prescott.—Scott Bros. will erect business building; brick construction; two stories; lower floor, stores; upper floor, offices.

Fla., Jacksonville.—W. H. Thompson will erect three-story brick business building; cost \$2000.

Ga., Norman Park.—K. W. Horne will erect store to replace structure reported burned; loss \$4500.

Ga., Norman Park.—A. W. Patterson will rebuild store reported burned; loss \$7500.

Ga., Norman Park.—A. Kuribus will rebuild store reported burned; loss \$7500.

La., Tallulah.—George Spencer will erect double brick store; plate-glass front.

Mo., St. Louis.—Seventeenth St. Realty Co. will erect mercantile building at Washington Ave. and 17th St.

Mo., St. Louis.—P. S. Marquis will erect mercantile building.

N. C., Charlotte.—C. E. Mason will erect business building.

Okl., Oklahoma City.—J. P. Martin of Martin Lumber Co. will erect two-story brick building at 2½ West Main St.

S. C., Kingstree.—D. C. Scott will erect 30x80-foot drug store recently noted; fireproof construction; tile roofing; cost \$10,000; architect not selected.

Tenn., Chattanooga.—J. T. & C. C. Duggar, 5 Bayne St., will erect four one-story store buildings on West 9th St.; cost \$3500.

Tenn., Chattanooga.—J. W. Lawless, 113 Read Ave., has purchased site and will erect mercantile building; cost \$2500; construction will not begin for some time.

Tex., Franklin.—F. S. Estes will erect business building; two stories; concrete construction.

Tex., Houston Heights.—American Drug Corporation, Box 258, contemplates erection of store building. (See "Machinery Wanted.")

Tex., Dallas.—S. H. Kress & Co., 396 Broadway, New York, plans, it is reported, erection of store at Elm and Stone Sts.

Tex., Roston.—Wight, Payburn, Steel & Denton will erect store building; two stories; stone; 75x108 feet.

Tex., San Benito.—Crawford & Breen will erect business building.

Tex., San Benito.—C. W. Dunaway will erect business building.

Tex., San Benito.—F. C. Van Ness will erect business building.

Tex., San Benito.—F. T. Phillips will erect business building.

Va., Richmond.—D. and A. Moschetti will erect store and dwelling. (See "Dwellings.")

W. Va., Huntington.—Meadows & Swann will erect business block; three stories; cost \$20,000.

THEATERS

La., New Orleans.—Leopold Levy will expend \$10,000 to improve theater recently noted; 60x120 feet; ordinary construction; electric lighting; plans not made.

WAREHOUSES

Ala., Birmingham.—Smith Realty Co. Incorporated with \$15,000 capital stock; will erect warehouse 50x182 feet, four stories, brick and stone; bids invited; Philfer Smith, president; Harold Smith, treasurer.

Ala., Montgomery.—People's Warehouse Co.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Md., Baltimore.—Frederick Shaw, Eutaw and Franklin Sts., awarded contract to B. W. & E. Minor, 224 West Pratt St., for erection of apartment-house on 13th St.; three stories; ornamental frame; stone foundation; slate roof; vacuum cleaning plant; hot-water heat; electric wiring; cost about \$25,000; plans by Stanislaus Russell, Clifton Ave. and 7th St., Baltimore.

BANK AND OFFICE

Fla., Bronson.—Bank of Levy County, W. J. Epperson, president, awarded contract for erection of proposed bank building; 24x36 feet; fireproof vault; brick walls; acetylene-gas lighting; cost \$2000; materials purchased.

Okla., Oklahoma City.—Dora Patterson awarded contract to Campbell & O'Keefe of Oklahoma City to erect office and store building; six stories and basement; 50x140 feet; reinforced concrete; ground floor for stores and upper floors for offices; estimated cost \$160,000; later it is proposed to build three additional stories.

Tenn., Memphis.—Chickasaw Building Co., J. N. Falls, president, awarded contract to Valley Construction Co. of Memphis to erect office building for cotton factors and brokers; building will be 10 stories; reinforced concrete; fireproof; 100x118 feet; three elevators; estimated cost \$200,000; plans by John Galsford of Memphis. (Mentioned in June.)

Tex., Maypearl.—Farmers and Merchants' State Bank awarded contract to F. N. Daniels, Fort Worth, Tex., for erection of proposed bank building; two stories; 25x80 feet; stoves; cost \$5500; plans by E. S. Boze, Waxahatchie, Tex.

W. Va., Elm Grove.—First National Bank awarded contract to G. B. Bushon and E. J. Lehman, both of Park View (P. O. Wheeling, W. Va.), to erect building; three stories; brick; first floor, bank; second floor, offices, and third floor, apartments; building will be 53x56 feet; heating and lighting not in contract; cost \$14,000; plans by E. B. Franzheim, Wheeling, W. Va. (Recently mentioned.)

CHURCHES

D. C., Washington.—Church of Ascension, 12th St. and Massachusetts Ave., awarded contract to Randolph L. Jennings, 125 G St. N. W., Washington, to erect Sunday-school hall; one story; 50 feet wide and 30 feet deep; "poured" cement type of construction; beamed ceiling; hardwood floors; pergola for vines to extend entire width of addition.

Fla., Tampa.—Board of Public Works awarded contract at \$6895 to Dekel & McGucken, Tampa, for erection of brick fire station in Hyde Park; all four sides of faced brick. (Previously noted.)

and Western Railway of Alabama, C. A. Wickersham, general manager, Atlanta, Ga., are considering rebuilding cotton warehouse recently reported burned at loss of \$8000; reported expenditure, \$25,000.

Ark., Nashville.—Farmers' Union Warehouse Co. incorporated with \$4000 capital stock by G. W. Sullivan, J. H. Norsworthy, L. R. Jones and others.

La., Poydras.—Illinois Central Railroad, A. S. Baldwin, chief engineer, Chicago, Ill., contemplates, it is reported, erecting inbound freight warehouse at Poydras terminals.

Md., Baltimore.—Franklin P. Cator of Armstrong, Cator & Co., 13-15 West Baltimore St., purchased site 29x30 feet on German St., and is having plans prepared by Wyatt & Nolting, Keyser Bldg., Baltimore, for warehouse; fireproof; six stories and basement; will be occupied by Armstrong, Cator & Co.

Miss., Hattiesburg.—Farmers' Warehouse Co., Jackson, Miss., will erect fireproof warehouse recently noted; plans not definite.

S. C., Charleston.—Atlantic Coast Line Railroad, E. B. Pleasants, chief engineer, Wilmington, N. C., will rebuild burned warehouse.

Tenn., Chattanooga.—C. R. Baird Company, 1453 Market St., is having plans prepared for warehouse on William St.; two stories and basement; 100x190 feet; brick; composition roof; \$15,000.

Va., Manchester.—American Tobacco Co., 215 Fifth Ave., New York, purchased 25 acres of land, and will erect tobacco warehouse.

Va., Richmond.—T. W. Wood & Sons will erect warehouse; three stories; brick; cost \$6500.

Va., Richmond.—Waller Scott and associates contemplate erecting nine-story warehouse at 6th and Canal Sts.

Ga., Dublin.—Methodist Church, Rev. J. M. Outler, pastor, awarded contract to J. A. Kelly of Dublin at \$19,000 to remodel edifice and erect Sunday-school room. (Recently mentioned.)

La., New Orleans.—St. Charles Ave. Baptist Church, Rev. W. H. Brengle, pastor, awarded contract to O. E. Bechtel of New Orleans to erect Sunday-school addition to edifice; main addition to be 30x70 feet; two stories; brick and stucco; contain 12 classrooms, meeting rooms, etc.; hot-air heating; electric call bells to connect each room; estimated cost \$8000; plans by Drago & Bear of New Orleans; William Drago will supervise construction. (Recently mentioned.)

Md., Baltimore.—St. John's English-Lutheran Church, Rev. G. Albert Getty, pastor, 927 North Fulton Ave., awarded contract to McLaughlin Bros., 915-927 Bolton St., Baltimore, to erect edifice on Kate Ave. and Pimlico Rd.; stone; gothic architecture; estimated cost \$10,000; McLaughlin Bros. also prepared plans.

DWELLINGS

Ala., Birmingham.—Mrs. A. C. Simmons will expend \$2500 to erect dwelling; 40x50 feet; 11 rooms; ordinary construction; hot-air heat; electric lighting; contract recently noted awarded to Adams & Chambliss, 901 Cotton Ave., Birmingham, Ala.

Ark., Little Rock.—John Kirspeel awarded contract to B. Holstegge, Little Rock, for erection of two-story residence; cost \$6354.

D. C., Washington.—Otto J. Botsch awarded contract to W. B. Avery, 155 Massachusetts Ave. N. W., Washington, for erection of store and dwelling at 591 4th St. S. E.; two stories; brick; cost \$5283; plans by Oscar G. Vogt, Corcoran Bldg., Washington.

Ga., Atlanta.—Wm. J. Davis awarded contract to Paul Wesley, Peters Bldg., Atlanta, for erection of dwelling; eight rooms; two stories; frame; stone foundation; porch columns; tile roof; furnace; electric lighting; cost \$4500; plans by Lella Ross Wilburn, 305 Peters Bldg., Atlanta.

Ga., Atlanta.—Dr. L. T. Pattillo awarded contract to Rose Realty Co., Peters Bldg., Atlanta, for erection of proposed dwelling; two stories; seven rooms; frame; stone foundation; furnace; electric lighting; cost \$4000; plans by Lella Ross Wilburn, 305 Peters Bldg., Atlanta.

Ga., Atlanta.—C. E. Cresce awarded contract to J. L. Denson, Atlanta, for erection of dwelling; one and a half stories; frame; shingle roof; furnace; cost \$3500; plans by Lella Ross Wilburn, 305 Peters Bldg., Atlanta.

Ga., Rossville.—Dr. C. H. Gurney awarded contract to A. S. Johnson, 206 Dodds Ave., Ridgedale, Tenn., for erection of proposed dwelling; six rooms; frame; shingle roof;

cabinet mantels; hard pine interior finish; electric lighting; cost \$2000.

La., New Orleans.—B. T. Lawrence awarded contract to Metropolitan Building Co. (address care of Mr. Lawrence) for erection of dwelling recently noted; mill construction; grates; cost \$5000; plans by J. H. Diboll, Maison Blanche, New Orleans.

Md., Baltimore.—Wm. R. Fauntleroy, 1517 Westwood Ave., awarded contract to J. W. Paea, 1617 North Fulton Ave., Baltimore, for erection of bungalow on Bateman Ave., near Lyndhurst Ave.; one and a half stories; frame; hardwood floors; cost \$3500; residence will be 27x32 feet; mill construction; steam heat; gas and electric lighting; plans by John R. Forsythe, 223 St. Paul St., Baltimore.

Md., Baltimore.—John T. Donohue, 1898 Thames St., has plans by and awarded contract to M. R. Stone, 2238 East Hoffman St., Baltimore, for eight two-story dwellings on east side of Curley St., between Eastern and Canton Aves.; two, 14x45 feet; six, 12x41 feet; tin roofs; hot-air heat; cost \$16,000.

Md., Baltimore.—Walter S. Keenan, Allen Ave., has plans by H. Hilditch, 439 East Clement St., Baltimore, for erection of 10 dwellings on Park Heights Ave. near Old Pimlico Rd.; 14x44 feet; two stories; brick; Carey roofing; hot-air heat; cost \$18,000; construction by owner.

Md., Baltimore.—Eugene Rimm is reported to have awarded contract to Harding & Peters, Builders' Exchange, Baltimore, for erection of 11 brick and frame cottages on York Rd.; two and a half stories.

Md., Baltimore.—John J. Guthrie, president of Clifton & Woodland Company, 217 South Charles St., awarded contract, it is reported, for erection of dwellings at Forest Park; two and a half stories; frame; cost \$6000.

Md., Baltimore.—Geo. Welapski has, it is reported, awarded contract to E. A. Moller, 1617 Harlem Ave., Baltimore, for three-story pressed-brick dwelling at 539 South Bond St.; 15x64 feet; cost \$3000; construction under supervision of owner.

Tenn., Chattanooga.—Mrs. Margaret Wood, 115 17th St., awarded contract to F. C. Buckley, Chattanooga, for erection of proposed dwelling; 12 rooms; brick; metal roof; hard pine interior finish; cabinet mantels; electric and gas lighting; cost \$3600.

Tenn., Chattanooga.—A. Werner, 11 Early St., awarded contract to J. Denneman, 518 West Main St., for erection of dwelling on Henderson Ave.; six rooms; frame; shingle roof; cabinet mantels; hard pine interior finish; gas and electric lighting; cost \$2000.

Tenn., Chattanooga.—Douglas Baxter, 647 Vine St., awarded contract to C. N. Moulton, Hill City, Tenn., for erection of three dwellings; five rooms; frame; shingle roof; hard pine interior finish; cabinet mantels; electric lighting; cost \$1800.

Tenn., Knoxville.—B. F. Briscoe will expend \$11,000 to erect dwelling; 55x58 feet; two stories and basement; ordinary construction; brick veneer; heating and lighting not decided; plans by George F. Barber & Co., Knoxville; contract recently noted awarded to Thomas & Turner, Knoxville.

Tenn., Nashville.—W. Miles White awarded contracts for erection of residence; plans by Thomas Marr, Nashville, call for two stories; brick; hardwood floors; plate-glass front windows; hot-water heat; rubberoid roofing covered with Bangor slate with tile hip rolls and ridges, copper flashings and valleys; cost \$10,000.

Tex., Orange.—Harry Latchfield awarded contract to J. E. Hogg, Orange, for erection of cottage; seven rooms; cost \$3000.

Tex., Valley Mills.—W. L. McElhannon awarded contract to E. H. Odell, Valley Mills, to erect dwelling recently noted; six rooms; mill construction; cost \$1700; plans by Associated Architects, 257 Main St., Dallas, Tex.

Va., Norfolk.—Capt. Charles James, 1320 Mosher St., Baltimore, Md., has plans by and awarded contract to R. B. Darden, 606 18th St., Norfolk, for erection of dwelling; 63x34 feet; 2½ stories; frame; hot-water heat; cost \$5000.

Va., Norfolk.—Paul L. Rose awarded contract to C. M. Casperson, Norfolk, for erection of frame residence; cost \$4000.

Va., Richmond.—William R. Burrell, 1102½ North 21st St., awarded contract to W. B. Carey, 1609 North 23d St., Richmond, for erection of dwelling recently noted; 30x36 feet; mill construction; frame; hot-water heat; gas and electric lighting; cost \$2500; plans by F. Johns, address, care of Mr. Burrell.

HOTELS

Ark., Heber Springs.—Cyrus E. Crosby awarded contract to A. B. Carrier for remodel-

ing row of concrete structures into hotel; 45 rooms; frontage 250 feet; two stories; steam heat.

Ark., Heber Springs.—C. F. Crosby, president of Cleburne County Bank, awarded contract for erection of hotel.

Ga., St. Simon's Island (not a postoffice).—C. E. Dunn of Waycross, Ga.; H. D. Bunn of Ware county, Georgia, and B. S. Gibson of Eufaula, Ala., awarded contract for erection of 60-room hotel on St. Simon's Island.

Md., Baltimore.—Hotel Caswell awarded contract to McLaughlin Bros., Inc., 916 Bolton St., Baltimore, for improvements; cost \$4000; plans by Wyatt & Nolting, Keyser Bldg., Baltimore. (Previously reported.)

Md., Silver Springs.—Silver Springs Hotel Co. awarded contract to S. I. Bush Construction Co., Harrisonburg, Va., for erection of hotel; 50 rooms; three stories and basement; hollow concrete blocks; plans by Rich & Fitzsimmons, Oxford Bldg., Washington. (Previously noted.)

MISCELLANEOUS

Md., Baltimore.—Lunchroom.—Horn & Horn, 303-305 East Fayette St., awarded contract to B. F. Bennett Building Co., 123 South Howard St., Baltimore, for improvements to Fayette street side of building; interior will be frescoed and remodeled; work begun; plans by Otto G. Simonson, 1219-1211 American Bldg., Baltimore.

D. C., Washington.—Studio.—H. K. Bush Brown, 1729 G St. N. W., awarded contract to Boyle-Robertson Construction Co., Washington, for erection of proposed studio; 45x55x30 feet; ordinary construction; electric lighting; cost \$7000; plans by Hornblower & Marshall, 1516 H St. N. W., Washington.

SCHOOLS

Ga., Atlanta.—School of Education awarded contract to Moise De Leon, Atlanta, for erection of Ninth ward school building on North Ave.; cost \$10,000; to Geo. A. Clayton, Atlanta, for erection of Eleventh ward school building in Chastaintown; previously reported; 60x112 feet; ordinary construction; cost \$3,000; heating plant to cost \$3000; plans by E. E. Dougherty, Atlanta. (See "Machinery Wanted.")

STORES

Ala., Birmingham.—T. C. Cairns awarded contract to C. W. Brown, Birmingham, to erect store building; 100x140 feet; ordinary and mill construction; steam heat; electric lighting; cost \$40,000; plans by H. D. Breeding, Birmingham.

Ala., Birmingham.—Ensley Company awarded contract to H. W. Culpepper for erection of two one-story buildings; cost \$4000 and \$5000.

Tex., Brownsville.—Mrs. H. Bollock awarded contract to Ed Singleton of New York to erect store building; three stories and basement; 45x120 feet; hand elevator; ordinary construction; enameled-brick front; cost \$25,000; plans by Cooke & Co., Houston, Tex. (Recently noted.)

Va., Norfolk.—Mrs. J. P. Johnson and T. S. Southgate will expend \$16,000 to erect store building; 80x100 feet; ordinary construction; heating plant to cost \$2500; lighting plant, \$500; elevator, \$1000; plans by Russell E. Mitchell, Norfolk; contract recently noted awarded to Walker Construction Co., Norfolk.

Va., Richmond.—Thalheimer Bros. awarded contract to John T. Wilson Company, Inc., Mutual Bldg., Richmond, for erection of store to be occupied by Sydnor & Hundley; 125x157 feet; fireproof construction; steam heat; electric lighting; cost \$125,000; will let sub-contracts; address contractors; plans by Charles K. Bryant, Richmond.

THEATERS

Fla., St. Petersburg.—Henry Tonnelier of Benton Harbor, Mich., awarded contract for erection of theater; two stories; 40x100 feet; ventilating system; seating capacity 600; plans by Mr. Ferndon. (Recently noted.)

WAREHOUSES

Va., Salem.—E. B. Marshall awarded contract to G. L. Senrs (address, care of Mr. Marshall) to erect warehouse recently noted; two stories; ordinary construction; brick walls and cement foundation; electric lighting; plans by G. R. Ragan, Salem.

The Ober Catalogue.

A catalogue illustrative and descriptive of Ober lathes, sanders, shapers, etc., is being distributed by the Ober Manufacturing Co., Chagrin Falls, O. This company manufactures patent handle, spoke and variety turning lathes, sanders, shapers, saw mandrels, chucks and other equipment.

RAILROAD CONSTRUCTION

RAILWAYS

Ala., Union Springs.—The Union Springs & Northern Railway, according to a report quoting contractors, has nearly completed its extension from Fort Davis to Milstead, 29 miles.

Ark., Stuttgart.—The Stuttgart & Rice Belt Railway, according to a report quoting an officer, has laid about three miles of track on its 20-mile line between Stuttgart and Deval Bluff. H. Dalhoff is contractor and D. A. McKee chief engineer, both at Little Rock, Ark. G. C. Lewis of Deval Bluff, Ark., is president.

Fla., Fort Myers.—The County Commissioners are reported to have granted a franchise for an electric railway in Fort Myers and its vicinity. The Mayor may be able to give information.

Fla., Bartow.—The Charlotte Harbor & Northern Railway, it is reported, will extend its line through Mulberry, possibly to Lakeland. L. M. Fouts is vice-president and general manager at Boca Grande, Fla., and G. S. Bruce, chief engineer, at Arcadia, Fla.

Fla., Inverness.—The Seaboard Air Line, it is reported, has awarded contract to Roswell, Kohler & Co. to build an extension which is expected to reach Inverness. W. L. Seddon is chief engineer at Portsmouth, Va.

Ga., Atlanta.—Survey is reported under way for the proposed line of the Atlanta & Northeastern Railway Co. from Atlanta via Bolton, Roswell and Alpharetta to Cumming, Ga., about 40 miles. Construction is to begin as soon as survey is completed. J. P. Brooke is president; R. P. Jones, vice-president; J. L. Murphy, secretary, Candler Bldg., Atlanta, Ga.

Ga., Waycross.—An official letter from the Atlantic Coast Line confirms the report that 85-pound rail will be laid between Waycross and Albany, Ga.

Ky., Jackson.—Bids will be received up to noon November 4 for an additional extension of the Lexington & Eastern Railroad from a point three miles above Whitesburg, Ky., to and up Boone's Fork, about 12 miles. J. E. Willoughby is chief engineer of construction, 9th St., Louisville, Ky.

Ky., Covington.—The Louisville & Nashville Railroad, according to a report, has prepared plans for new yards near De Coursey. There will be 27 tracks and other improvements. W. H. Courtenay is chief engineer at Louisville, Ky.

Ky., Stearns.—President J. S. Stearns of the Stearns Coal & Lumber Co., residing at Ludington, Mich., writes that it is proposed to extend its railroad 20 or 30 miles into coal and timber land along the South Fork of the Cumberland River in Kentucky and Tennessee.

Ky., Pikeville.—The Chesapeake & Ohio Railway, it is reported, will build an extension from a point near Pikeville to a point near Whitesburg, Ky. H. Pierce, Richmond, Va., is engineer of construction.

Ky., Riverton.—An officer of the Eastern Kentucky Railway says that the report that it proposes to extend from Webbville to coal fields in Magoffin county is without foundation, excepting that some maps were recently filed to provide for possible extensions at any time that may be desired.

La., New Orleans.—J. W. Barkdull denies the report that he is negotiating to build a railroad from New Orleans to Greenwell Springs.

La., Oberlin.—The Oberlin, Hampton & Eastern Railroad, which is to be built by the Williams Bros. Lumber Co. from Oberlin to Hampton, nine miles, may, it is said, be finally continued to Eunice, La. W. B. Williams of Oberlin, La., is president and O. L. Reiszner of Le Compté is engineer.

Md., Frederick.—The Frederick Railway Co., which has lines from Frederick to Thurmont and Middletown, Md., contemplate, according to a report quoting Emory L. Coblenz, president, laying more tracks in Frederick City on Market and Patrick Sts. to afford local car service in connection with the Interurban.

Md., Hagerstown.—Franchise is reported granted to Major L. N. Downs of New York, H. L. Kirby of Virginia and others for the contemplated electric railway from Hagerstown via Clear Springs, Md., to Mercersburg, Pa., 27 miles. James B. Kreps of Hagerstown is said to be interested.

Miss., Jackson.—A letter to the Manufacturers Record from one of the interested parties confirms report that it is proposed to build a railroad from Jackson to Carthage, Miss., 48 miles, following the Pearl

River Valley. J. Numa Jordy of New Orleans is the promoter. Two bridges will be required over Pearl River and another over Yockanookany River. The bridge at Jackson will be large. Route is level. A bonus of \$75,000 is asked, and it is proposed to begin construction within 60 days after raising it.

Mo., Cape Girardeau.—The Charleston & Hickman Railroad Co. says a dispatch, has been chartered with \$600,000 capital to build a line about 50 miles long from Ancil via Charleston to a point opposite Hickman, Ky., and to connect with the Cape Girardeau & Thebes Bridge Terminal Railroad. The incorporators are Gibney Houck, Charles C. Juden, Ralph Schulz, William H. Bohnsack and Charles T. Lewis of Cape Girardeau, Mo.

Mo., Farmington.—Concerning the San Francois County Railroad Co., recently chartered, one of the incorporators informs the Manufacturers Record that the line is already built. It is 15 miles long and connects De Lassus, Farmington, Esther and Flat River. The incorporators are M. P. Cayce, Peter Glessing, John Glessing, W. F. Doss, Ed Kilian, Wm. R. Lang, W. M. Harlan and William R. Taylor.

Mo., St. Louis.—Isaac A. Smith, civil engineer, advises that charter for an interurban railway company has been obtained in Illinois for a line to connect St. Louis, Mo., East St. Louis, Springfield and Centralia, Ill., and other points intervening. It will be about 200 miles long, and operated by either electric or gasoline power. Capital has been arranged for in Europe. A branch is projected from Coffeen to Mt. Carmel, Ill., and an extension is contemplated from Carlyle to Nashville, Tenn. Mr. Smith is president and general manager.

N. C., High Point.—C. O. Birney, representing the Stone & Webster Engineering Corporation of Boston, is reported investigating the proposed line of the Piedmont Traction Co. to connect Greenville, High Point and Durham, N. C.

N. C., Scotland Neck.—Charles McNaughton, according to a dispatch, will superintend construction of the Bowers-White Lumber Co. Railroad from Scotland Neck to Roanoke River; work is expected to begin immediately; headquarters at Scotland Neck.

Okla., Buffalo.—Surveys are reported being made for the proposed Buffalo & Northern Oklahoma Railroad, of which E. M. Best of Buffalo, Okla., is president. Eugene Tilleux of Hutchinson, Kans., is chief engineer.

Okla., Fairview.—H. Leon Miller, promoter of the Winnipeg, Salina & Gulf Railroad, according to a dispatch, is again working on the plan, and is reported as saying that bonds for construction have been floated in London.

Okla., Fairview.—W. B. Noble, general manager of the proposed Fairview & Oklahoma City Railroad, is reported as saying that construction will begin about January 1 on the proposed line from Fairview to Musk, four miles, connection being made there with a branch of the Rock Island.

Okla., Lawton.—T. L. Poole of Oklahoma City, says press report, is backing a plan to build a line from Lawton to Wichita Falls, Tex., about 55 miles.

S. C., Orangeburg.—The city has voted to issue \$20,000 of bonds to aid the Orangeburg Railway Co., promoted by Wm. C. Wolfe and others, to build a line about 18 miles long from Orangeburg to North, on the Seaboard Air Line.

Tenn., Harriman.—An officer of the Knoxville, Harriman & Eastern Railroad writes that contract has been let to J. R. McDowell of Knoxville, Tenn., for 17½ miles of construction from Harriman eastward, including a 50-foot through girder bridge across Little Emory River. Route is in rough country. C. E. Hendrick is president; W. A. Roewell, treasurer; Henry M. Winslow, secretary, and W. J. Clarke, chief engineer at Harriman, Tenn.

Tenn., Dyersburg.—An official of the Birmingham & Northwestern Railroad Co. is reported as saying that contracts will be let about January 1 for the line from Dyersburg to Jackson, Tenn., 45 miles, via Friendship, Stokes, Alamo, Bells, Fruitvale or Gadsden and other towns. R. M. Hall of Dyersburg, Tenn., is president.

Tenn., Memphis.—The Illinois Central Railroad, the Chicago, Rock Island & Pacific Railway and the St. Louis & San Francisco Railroad, it is reported, have finally reached an agreement to build a new passenger terminal on the site of the present one at Main and Calhoun Sts. Cost about \$1,000,000. W. L. Park of Chicago, general manager of the Illinois Central, is expected to soon an-

nounce the improvements. A. S. Baldwin, also of Chicago, is chief engineer of that road. J. B. Berry, Chicago, of the Rock Island; M. C. Byers, St. Louis, of the Frisco. An officer of the Illinois Central telegraphs that the report is in error as to the station having been authorized.

Tenn., Memphis.—An ordinance has been approved for the elevation of the tracks of the Louisville & Nashville Railroad, the Nashville, Chattanooga & St. Louis Railway, the Southern Railway, the St. Louis, Iron Mountain & Southern Railroad, St. Louis & San Francisco Railroad and the Union Railway Co., in connection with the proposed construction of subways for various thoroughfares to avoid grade crossings. The chief engineers of the various railroads mentioned are, respectively, W. H. Courtenay, Louisville, Ky.; Hunter McDonald, Nashville, Tenn.; W. H. Wells, Washington, D. C.; E. F. Mitchell, St. Louis, Mo.; M. C. Byers, St. Louis, Mo., and B. G. Stillwell, Memphis, Tenn.

Tex., Beeville.—The Southern Pacific Railway, according to a dispatch, contemplates building an extension from Beeville to Spofford, Tex., about 225 miles, to shorten its overland route. A. V. Kellogg is engineer in charge of way at Houston, Tex.

Tex., Onalaska.—The Beaumont & Great Northern Railroad, according to a report quoting an officer, proposes to extend to Waco, Tex., and also to Beaumont. R. C. Duff is vice-president and general manager at Onalaska, Tex.

Tex., Houston.—Ed Kennedy & Son of Houston are reported as saying that a company has been organized and equipped by financiers of Houston and other places to build a trunk-line railroad about 300 miles long from Houston to Natchez, Miss., or some other point on the Mississippi River.

Tex., Weatherford.—A dispatch says that the Chicago, Weatherford & Brazos Valley Railway Co. has amended its charter to build an extension from Bridgeport to Gainesville, Tex., about 60 miles. R. W. Miller is president; Mitchell, Pigg & Co. are contractors from Weatherford to Bridgeport, Tex., 35½ miles.

Va., Richmond.—The Richmond, Urbanna & Peninsula Railway has secured an extension of time for two years to build its proposed line between West Point and Urbanna, Va. Governor Mann is said to be interested.

Va., Stonegap.—Reported that contract is awarded to Bunn & Co. of Big Stone Gap, Va., for five miles of railroad up Roaring Fork from a point near Appalachia, Va., on the Interstate Railroad. A. H. Reeder, general manager of the Interstate at Stonegap, Va., can probably give information. Calvin Pardee of Philadelphia, Pa., is said to be interested.

Va., Roanoke.—An official letter from the Norfolk & Western Railway Co. says there is no foundation for a current report that it is contemplated to build a tunnel to improve grade on the Pocahontas division.

W. Va., Clarksburg.—Bennett & Talbott of Fairmont, W. Va., are reported to have the contract to build four additional freight tracks for the Baltimore & Ohio Railroad at Clarksburg. Considerable grading is required. Work is begun.

W. Va., Clarksburg.—The Fairmont & Clarksburg Traction Co., says a report, will begin survey immediately to the suburb of Northview for a line which will be built to connect with the Interurban to Fairmont. J. O. Watson is general manager at Fairmont, W. Va.

W. Va., Clarksburg.—An officer of the Virginian Railway says that the contract awarded to Carpenter & Boxley of Roanoke, Va., is for grading and putting in masonry for viaducts between Clarksburg and Harper on the revision of line and grade there.

W. Va., Ireland.—The Baltimore & Ohio Railroad is reported surveying to locate a line from Hampton, on the Pickens Division, to Holly Junction for the purpose of securing lower grades. A. W. Thompson is chief engineer at Baltimore, Md.

STREET RAILWAYS

Ala., Birmingham.—Reported that a new company has been formed to build an electric railway about three and a half miles long from a connection with the Birmingham Railway, Light & Power Co.'s road to Grandview, on the summit of Shade's Mountain. A. H. Ford, president and general manager of the Birmingham Railway, may be able to give information.

Ark., Hot Springs.—According to a press report, the Hot Springs Street Railway Co. announces that it will build an extension of one mile in the southern part of the city.

Md., Baltimore.—Mayor Mahool has approved the ordinance authorizing the United Railways & Electric Co. to lay double tracks on Light St. from Baltimore to Lee St., seven blocks, and work will probably begin soon. Wm. A. House is president.

Mo., St. Louis.—Charles F. Dollas, representing the Gratiot & Lindenwood Improvement Association, and others are reported contemplating construction of an independent street railway from South Broadway to Greenwood and Maplewood, in the suburbs.

N. C., Asheville.—The Asheville Electric Co., it is announced, will build an extension of two miles as soon as the new bridge over the French Broad River is completed. Contractors are bidding on the work of grading from the bridge to Jarrett's Store. C. B. Clarke & Co. are the bridge contractors.

Okla., Ponca City.—B. Steward and Frank Hatten of Ponca City are reported to have secured capital and made preliminary arrangements to build a street railway. Application will be made for a charter.

Tex., Amarillo.—Construction is reported begun on an electric railway two miles long from Amarillo to San Jacinto Heights. N. A. Brown is said to be interested.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

Blackboards.—George A. Clayton, Atlanta, Ga., wants prices on blackboards.

Boxes, Cartons, etc.—See "Drugs, etc."

Boiler.—Straight Creek Coal Mining Co., W. L. Moss, general manager, Cary, Ky., wants prices on small upright boiler, about 20 horse-power.

Bridge Construction.—C. J. McKenna, County Auditor, Fort Worth, Tex., will receive bids until 10 A. M. November 14 for construction of concrete bridge over Sycamore Creek; also for construction of 40-foot span steel bridge over Little Bear Creek on Smith Rd and Pleasant Run, Md.; plans and specifications to accompany bids.

Bridge Construction.—Office of State Highway Commission, Richmond, Va. Bids will be received at Clerk's office in Isle of Wight, Va., until noon November 7 for construction of 38 feet concrete beam span over Great Swamp in Isle of Wight county, Virginia; plans and specifications on file at above office and of Clerk of Isle of Wight county, Isle of Wight, Va.; certified check for \$200 to accompany each bid. Further information

furnished on application to office of P. St. J. Wilson, State Highway Commission, Richmond.

Bridge Construction.—J. P. Goodwin, Supervisor of Greenville county, Greenville, S. C., receives bids until noon November 10 for construction of steel bridge over Mush Creek near Tigerville, and one over Brushy Creek on Augusta Rd., five miles from Greenville; plans on file in office of Supervisor.

Building Materials.—J. J. Flavin, Staunton, Va., wants prices on hardware, doors, window frames, flooring, framing lumber, etc.

Building Materials.—New Baptist State College, M. P. Matheny, president, Argenta, Ark., wants prices on building materials for college buildings to cost \$60,000.

Building Materials.—John F. Folk, Bamberg, S. C., wants prices on brick, cement, lime, roofing, steel laths, door sash and blinds for 12 dwellings.

Cars.—Pennsylvania Equipment Co., West End Trust Bldg., Philadelphia, Pa., wants

to purchase three second-hand motor and three trailer cars similar to Brill semi-convertible; also wants 30-ton box cars.

Carbon-paper Machinery.—N. S. Joshi, Bomba, Uganda, British East Africa, wants information and prices on machinery for manufacturing carbon paper.

Cement.—See "Building Materials."

Charcoal Ovens.—William H. Gerhard, Austin, Tex., wants to correspond with manufacturers of portable metallic ovens for manufacturing charcoal.

Concrete Wall.—Ennis M. Douglass, City Clerk, Memphis, Tenn., will receive bids until noon November 4 for construction of reinforced concrete wall along west side of bank of Bayou Gayoso at Overton Ave.; specifications and profiles on file at office of City Engineer; certified check, \$250; E. H. Crump, Mayor.

Corn-grinding Machinery.—Toccoa Ice & Coal Co., Toccoa, Ga., will want price on machinery for grinding corn and mixed feed; capacity, 500 bushels per day.

Crusher.—O. R. Whitney, 39 Cortlandt St., New York, wants prices (f. o. b. cars point of delivery) on second-hand "D" gyratory stone crusher (Gates preferred); send full particulars.

Drainage.—Commissioners of Drainage District No. 1 of Lincoln County, Edward Young, secretary, Youngtown, Ark., receive bids until noon December 1 at office of attorneys for district, Crawford & Hooker, Pine Bluff, Ark., for construction of main and several lateral canals; work consists of about 12,600 feet of main ditch, average depth of 5 feet and bottom width of 10 feet, and 6,400 feet of main ditch, average depth of 6 feet and bottom width of 12 feet; 12,500 feet of lateral ditches, average depth of 5 feet and bottom width of 4 feet, and 15,700 feet of lateral ditches at average depth of 4 feet with bottom width of 2 feet; about 52,500 cubic yards excavation required for main canal and 34,500 cubic yards for lateral ditch; certified check for \$500 to accompany each bid; plans and specifications may be obtained from W. J. Parkes, engineer for district, 107½ Main St., Pine Bluff, Ark., or from Mr. Young at above address.

Dredging.—U. S. Engineer Office, Cincinnati, O. Proposals for removing Sand Creek dike and dredging in Ohio River about 14 miles below Ravenswood, W. Va., will be received until 12 M. November 23; information on application; John C. Oakes, Major, Engineers.

Drugs, etc.—American Drug Corporation, Box 253, Houston Heights, Tex., wants prices on cartons, labels, boxes, soap, perfumes, toilet preparations, etc.; also full line of patents that can be put up and labeled under name of firm.

Electrical Machinery.—Williams & Shock, 223 North Calvert St., Baltimore, Md., in market for 100-kilowatt generating unit; direct connected; boiler pressure 90 to 100 pounds; 110 volts; second-hand, in good condition.

Fertilizer Chemicals.—F. F. Cherry, Aurora, N. C., wants names of dealers in phosphate, muriate and sulphate of potash and nitrate of soda.

Fire-department Equipment.—City of Sarasota, Fla., J. Louis Houle, clerk, wants to purchase fire fighting apparatus, chemical engine and hook-and-ladder truck; send cuts, prices, etc.

Fish Scrap.—F. F. Cherry, Aurora, N. C., wants to correspond with manufacturers of and dealers in ground fish scrap.

Flooring.—George A. Clayton, Atlanta, Ga., wants prices on maple flooring.

Flooring.—See "Building Materials."

Glass.—W. Sharp, Sr., South Houston, Tex., wants prices on plate glass.

Hardware.—See "Building Materials."

Harness Machinery, etc.—P. G. Everett, Suffolk, Va., wants prices on harness and leather goods machinery and supplies.

Heating Plant.—New Baptist State College, M. P. Matheny, president, Argenta, Ark., wants prices on heating plant for \$60,000 college buildings.

Heating Plant.—W. O. Rainey, Memphis, Tenn., wants prices on moist hot air furnace. Ice Machinery.—O. L. Clark Company, Clarkton, N. C., wants to correspond with manufacturers of ice machinery.

Irrigation Plant.—George S. List, Powhatan, La., wants prices on small irrigation plant.

Lathe.—Hardie-Tynes Manufacturing Co., Birmingham, Ala., wants prices on heavy double-gear hollow-spindle engine lathe, to swing 30 inches and 6 feet between centers.

Levee Construction.—Proposals will be received by Commissioners of Brazos County Improvement District No. 1, W. W. Loftin,

chairman, Allenfarm, Tex., until 1 P. M. November 19 at Terrell's store at Allenfarm, Tex., for construction of about four miles of levee and completion of eight miles of levee partially constructed; proposal sheets, specifications, profiles and map may be obtained from T. R. Batte, Jr., improvement engineer, 806 Stewart Bldg., Houston, Tex.; copies may also be seen at office of W. W. Loftin, Allenfarm, and office of E. A. Scott, Navasota, Tex., and of Doremus & Butler, Bryan, Tex.; each bid to be submitted upon form furnished by improvement engineer, and be accompanied by certified check, payable to W. W. Loftin, chairman, for 5 per cent. of amount bid. (Date postponed from November 5.)

Medicines (Patent).—See "Drugs, etc."

Metal Ceiling.—W. Sharp, Sr., South Houston, Tex., wants prices on steel ceiling.

Mining Machinery.—Southern Manganese Mining Co., Harrisonburg, Va., wants prices on new or second-hand ore crusher, screens, picking belt, jig and steam shovel.

Paving.—John M. Murch, County Auditor, Galveston, Tex., will receive bids until noon November 14 for improving seawall boulevard from Ave. II to 16th St., approximating 3300 square yards of concrete sidewalk, 5400 linear feet concrete curbing and 5500 linear feet of 10-inch retaining curb; bids will be received for work as whole; certified check \$1000; specifications on file in offices of County Surveyor and Auditor, from whom copies can be had on application or any further information desired.

Novelty Manufacturers.—E. C. Lewis, Anderson, S. C., wants to correspond with manufacturers relative to manufacturing drawer supporters, cuff holders, buttons, etc.

Painting Machinery.—Alsop & Peirce, 18 First National Bank, Newport News, Va., wants to correspond with manufacturers of painting machines; 40,000 square yards of painting proposed.

Paving.—Sealed proposals on blank forms furnished by city and addressed to Mayor and City Council, Dalton, Ga., will be received until 3 P. M. November 22 for furnishing all equipment and labor for construction of 28,000 square yards of street paving, including all necessary drainage and granite curb; vitrified brick, wood block, bitulithic, granitoid and asphalt will also be considered; each bid must be accompanied by certified check for \$2500, made payable to Mayor; usual rights reserved; plans and specifications may be obtained at office of consulting engineer, H. S. Jaudon Engineering Co., Box 582, Savannah, Ga.; Paul B. Trammell, Mayor of Dalton.

Paving.—Bob Parman, City Clerk, Oklahoma City, Okla., receives bids until 5 P. M. November 7 for construction of sidewalks in Shillings, College, Cream Ridge, Bell Vern and University Additions and McKinley Pl.; also pave with asphalt, grade, etc., McKinley Ave., 35th St., Florida, Kentucky and Walnut Aves., etc.; plans and specifications on file in office of City Clerk; each bid for sidewalk construction to be accompanied by certified check for 2 per cent. of bid, and for asphalt paving, etc., by certified check for 3 per cent. of bid.

Paving.—E. R. Lee, City Clerk, Enid, Okla., receives bids until November 4 for construction of cement sidewalks in Sayers University Place Addition and Replat University Place Addition; certified check \$100.

Paving.—G. L. Baltzell, City Clerk, Fernandina, Fla., will receive bids until November 10 for paving Center St. from 5th to 11th St. with vitrified brick; specifications on file in office of City Clerk.

Piping.—E. D. Balcom, Balmorhea, Tex., will need 1500 feet of six-inch and smaller pipe for street and house connection.

Piping.—City of Rogers, Tex., J. D. King, Mayor, is ready to receive bids on four, six or eight-inch iron and wood pipe.

Piping and Specials.—Office of Commissioners, D. C. Washington, D. C. Proposals will be received until 2 P. M. November 9 for furnishing cast-iron water pipe and water-pipe specials. Blank forms of proposals, specifications and necessary information may be obtained from Chief Clerk, Engineer Department, Room 427 District Building, Washington, D. C. Cuno H. Rudolph, John A. Johnston, William V. Judson, Commissioners, D. C.

Pumps.—Board of Control, Norfolk, Va., will receive bids until 12:30 P. M. November 19 for design, furnishing and installing three electrically-driven centrifugal pumps at Colley Ave. pumping station; one 2000-gallon-per-minute pump; one 3000-gallon-per-minute pump; and one 4000-gallon-per-minute pump; instructions to bidders and specifications may be obtained on application to W. T. Brooke, City Engineer.

Roofing.—See "Building Materials."

Sewer Construction.—Board of Public Affairs, care of F. M. Oliver, clerk, Little Rock, Ark., will receive bids until noon November 7 for construction of storm-water sewer in Main St. from 2d St. north to river, according to plans and specifications on file in office of superintendent of public works; certified check, \$500.

Sewer Construction.—E. R. Lee, City Clerk, Enid, Okla., will receive bids until noon November 4 for construction of 225 feet of brick storm sewer on Elm Ave., from present outfall to point on 3d St., together with junction section leading to north across Elm Ave.; plans and specifications on file in office of City Engineer; certified check \$100.

Screens.—See "Mining Machinery."

Screens.—Gillespie Bros. & Co., 6 Stone St., New York, want names and addresses of manufacturers of bamboo screens.

Steam Shovel.—Southern Manganese Mining Co., Harrisonburg, Va., wants prices on new or second-hand steam shovel.

Steel Type, etc.—H. A. Clotworthy, Aiken, S. C., wants to correspond with manufacturer.

INDUSTRIAL NEWS OF INTEREST

Seeking Position With Investment.

A man of experience with general construction companies is seeking to obtain a position, preferably in the South, Southwest or California. He offers references as to character and ability, and is prepared to invest in a promising enterprise. Address Box 78, Sebeve, Ky.

Wheeling-Built Panama Equipment.

Among the contractors furnishing material for Panama Canal work is the McClintic-Marshall Construction Co. of Pittsburg. This company is making the giant gates for the canal, and it awarded contract to the Wheeling (W. Va.) Mold & Foundry Co. for more than \$1,000,000 worth of castings to be used for the gates. The castings are for 46 lock gates, which will weigh 1200 tons each.

Big Portland Cement Contract.

Contract has been awarded for the Portland cement to be used in constructing an electric power dam on the Ocoee River near Benton, Tenn. It was received by the Dixie Portland Cement Co. of Chattanooga, and calls for 150,000 barrels of the cement, the approximate cost being \$300,000. The Dixie plant is at Richard City, near South Pittsburg, and its daily capacity is 3000 barrels of cement.

Wants to Engage Competent Man.

An educational institution in Virginia desires to engage a man from 40 to 50 years of age to look after a heating and lighting plant and for other work. It is desired that he understand high-pressure boilers, pumps, engines, dynamos, electric wiring, etc., and know something of general repair work in a steamfitting and plumbing plant. For further information address No. 765, care Manufacturers Record.

Second-Hand Machine Tools.

Among well-known Southern machinery and supply dealers is Clarence Cosby of Richmond, Va. In the equipment which Mr. Cosby offers for sale is a large supply of second-hand machine tools, including lathes, planers, drills, etc. He also offers miscellaneous equipment, including a Pratt & Whitney double-head milling machine, Hiles & Jones traveling head shaper, Sellers car-wheel borer and other machines.

Shop Is in Operation.

The Black & Decker Manufacturing Co., 113-115 South Calvert street, Baltimore, Md., which recently incorporated to establish a machine and manufacturing plant, announces that its shop is in operation and that it is prepared to handle special propositions of a mechanical nature. It will manufacture special jigs, fixtures and tools for automobile, truck and airplane parts, engines, cars, trucks, aeroplanes, etc. The company will also make repairs to linotype molds, knives, composite molds, etc.

Awards Machinery Contracts.

The Union Central Light & Ice Co. of Hubbard City, Tex., operating electric-light, bottling, carbonating and ice-cream manufacturing plants, announces that it has awarded contracts for immediate shipment for a 250-horse-power engine and generating sets to the Skinner Engine Co. of Erie, Pa., and the Allis-Chalmers Company, Milwaukee. It has also awarded a contract to the Phoenix Iron Works Co. of Meadville, Pa., for a 250-horse-power boiler. In addition to this equipment the company will also install an oil-burning system at its plant.

ers of steel type and steel dies of fancy design.

Steel Tanks.—Union Central Light & Ice Co., Hubbard City, Tex., wants to purchase two steel fuel oil storage tanks; capacity, 12,500 gallons each; state condition, age, thickness, size, etc.

Talc Manufacturers.—Richard S. Dahl, Box 386, Sydney, Nova Scotia, Canada, wants to correspond with manufacturers of talc products.

Tube Mill.—Maryland Equipment & Supply Co., 419 Equitable Bldg., Baltimore, Md., wants prices on tube or ball mill (continuous type) 16 feet long.

Vault Doors.—W. Sharp, Sr., South Houston, Tex., wants prices on vault doors.

Water Systems.—W. O. Rainey, Memphis, Tenn., wants prices on elevated and underground water supply.

Wire Machinery.—Gillespie Bros. & Co., 6 Stone St., New York, want names and addresses of manufacturers of machinery for weaving wire for mattresses.

Resumes Operations.

The Gyp Water Softener & Filter Construction Co., 415-416-417 American National Bank Bldg., Oklahoma City, which suspended operations last December owing to the death of President Donnelly, announces that it has resumed operations and is actively soliciting contracts. This company designs, manufactures and installs the Donnelly system of water-softening and filtering plants of pressure and gravity types and of any capacity, giving attention to municipal filter plants. Its officers include David N. Taylor, president; Mrs. Jessie Donnelly, vice-president and general manager, and Mack E. Stewart, secretary and treasurer.

Improving Shipyard Facilities.

About \$12,000 will be invested by Booz Bros., foot of Henrietta street, Baltimore, to improve their facilities for shipbuilding and repairs. The present power of the firm's marine railway will be replaced with new modern machinery to include an electric double chain power operated by an electric motor of 150 horse-power, the electricity to be obtained from the Consolidated Gas, Electric Light & Power Co. This new equipment is to provide a lifting capacity of 200 tons dead weight clear of the water within 20 minutes. It will greatly facilitate operations at the Booz Bros. plant, for many years one of the well-known shipyards of Baltimore.

Completing Addition to Shop.

Reporting the largest demand in its history for electric Northern cranes and other products, the Northern Engineering Works, Detroit, Mich., announces that it is completing an addition to its crane-erecting shop. The new building is approximately 100x50 feet, of fireproof structural steel and brick construction, and having steel sash. Three cranes and two overhead trolley runs will serve the floor, and electric and pneumatic hoists will be used. Machinery has been installed, and the building will be occupied this month. A new storage yard for structural steel has been laid out alongside the addition, and is covered by a 60-foot span three-motor electric Northern Gantry crane of special construction.

Woolen Mill and Stock for Sale.

Its operators desiring to retire from business, the manufacturing plant of the Richard Sayles Woolen Co., H. R. Sayles, treasurer, Uxbridge, Mass., will be sold at public auction on November 15. The plant will be sold intact and embraces a complete four-set mill, mill real estate, machinery, etc., equipped with steam and water-power equipment. Several thousand dollars' worth of wools, yarns and stock will also be sold in lots to suit purchasers. The sale will also embrace eight separate parcels of real estate, including residence, rented houses, occupied tenement blocks, boarding-house property and woodland at Rivalet Village, Uxbridge. J. E. Conant & Co., Lowell, Mass., are the auctioneers, and will supply illustrated descriptive catalogue upon request.

A Slow-Speed Blower System.

Succeeding the Atlanta Blowpipe & Manufacturing Co., the Standard Blower & Metal Manufacturing Co., 8830 Madison Ave., Atlanta, has organized to manufacture and install blowpiping, fans, dust collectors, steel tanks, structural steel and general sheet-iron work, heating and ventilating systems, etc. The company has recently received contracts for the installation of its slow-speed blower system in the plants of the Cordele (Ga.)

Sash, Door & Lumber Co.; Philadelphia Veneer & Lumber Co.; Knoxville; Ramseur (N. C.) Furniture Co.; Flota Lumber Co.; Ramseur, N. C.; William J. Oliver Manufacturing Co.; Knoxville; Phoenix Planing Mill, Atlanta; Campbell-Dann Manufacturing Co., Tullahoma, Tenn.; W. S. Milne, Cleveland, Tenn.; Labin Manufacturing Co., Aniston, Ala., and the Larkin Company of America, Memphis, Tenn.

McKiernan-Terry Drill Co.

Announcement is made of the consolidation of the Terry Core Drill Co. with the McKiernan Drill Co. under the name of the McKiernan-Terry Drill Co., main offices 115 Broadway, New York. The new company will manufacture various products which have heretofore been manufactured by both companies, and by the union of office and factory organizations it expects to render more efficient service than was possible with the old companies. The company states that its purpose is to supply at low cost the highest grade of machinery that can be manufactured, including rock drills, hammer drills, core drills, coal cutters, sheet piling drivers, compressors, etc. Terry core drills and McKiernan rock drills and air compressors are already well known, their popularity being indicated by many orders being received from old customers.

To Sell Iron, Steel and Other Products

The Southern Steel Products Co., No. 391 Mutual Bldg., Richmond, Va., has organized a selling agency and warehouse company to handle iron, steel and kindred products. This company is equipped with ample capital and has engaged competent salesmen to visit the trade in Virginia, North Carolina, South Carolina, Georgia, Southern Alabama and Florida. It has secured territorial rights in these States from the J. C. Pearson Company, Boston, Mass., manufacturer of cement-coated wire nails, and also from the Lebanon Valley (Pa.) Iron & Steel Co.; Tower Manufacturing Co., Cincinnati, O.; Cincinnati (O.) Horseshoe Co.; Heller Bros. Company, high-speed steel, Newark, N. J., and Rex Imperial Leather Co., Newark, N. J. It wants to correspond with other manufacturers desiring representation in these States.

Sale of Mill Site and Plants.

By virtue of a decree of the District Court of the United States for the Eastern District of North Carolina, M. J. Hoyer of Wilmington, N. C., trustee in bankruptcy, will sell to the highest bidder for cash at public auction on the 28th of November, the saw and planing mill properties of the Angola Lumber Co. These properties consist of mill site, modern double band sawmill of 80,000 feet daily capacity, 10 drykilns, power plant, tools and appliances, and planing mill equipped with engines, planers, edgers, resaw, blower system, lumber buggies, etc. As authorized by the decree, the sawmill, machinery, tools and appliances will be sold separate from the site; the planing mill and its equipment will be sold separate from the sawmill, and the sawmill, planing mill, equipment, etc., and site upon which they are located will be sold as a whole.

Sales of Vilter Machinery.

Recent sales of the Vilter Manufacturing Co., Milwaukee, include the following installations: Wisconsin Motor Manufacturing Co., Milwaukee, 14x30-inch horizontal Corliss engine; Fairmont Creamery Co., Omaha, 55-ton refrigerating machine and 16 and 28x35-inch tandem compound Corliss engine; Jas. R. Hensler Ale Brewing Co., Newark, N. J., 50-ton refrigerating machine and 15x30-inch horizontal Corliss engine; Wm. Weber, Grafton, Wis., 10-ton refrigerating plant with 10x24-inch girder bed Corliss engine; Cia. Empacadora de Tampico, Tampico, Mex., 13-ton can ice-making tank and appurtenances; C. A. McDonald, Ltd., Chicago, 32-ton refrigerating machine; Takata & Co., exporters, New York, 7½, 24, 10 and 50-ton can ice plants; Horlicks Malted Milk Co., Racine, Wis., 20x36-inch direct-connected Corliss engine; Fred Miller Brewing Co., Milwaukee, 18-coil ammonia condenser; Gasmotoren Fabrik Deutz, Mexico City, 6-ton can ice plant; Houston Cocoa & Chocolate Co., Newark, N. J., direct-expansion piping.

Offers Machinery and Operators.

For the purpose of creating an object-lesson in practical methods of road-building, the J. I. Case Threshing Machine Co., Racine, Wis., has agreed to furnish the town board of Mt. Pleasant, Wis., road-building machinery, consisting of a 10-ton road roller, engine, scrapers, etc., together with a full complement of men to operate them effectively, provided the board will deliver and spread the necessary gravel to complete the work and supply culverts for drainage. It is the company's desire to extend the work to the north

city limits of Kenosha, through the township of Somers, and it has written the chairman of the town board of Somers with a view to effecting similar arrangements as have been made with the town board of Mt. Pleasant. The J. I. Case Threshing Machine Co. has long been prominent in the manufacture of high-class engines and threshing machines, and is now extensively engaged also in the manufacture of road-building machinery of various kinds.

Capnol Roofing Nails.

The purchase of cheap nails for roofing purposes is oftentimes an expensive investment, as repair bills for leaky roofs amount to more than the extra cost of efficient and reliable nails. Composition roofs, it is said, no matter how high the grade, are usually subject to climatic changes, and a large proportion of leaks developing in them may be traced to the nails with which they are fastened. They are liable to swell under the heat of the sun, in which case they will probably work over the head of flat, dead-head nails, or contract in cold weather, and cannot return under the head of a flat-head nail. To meet the requirements of composition and other roofing the Weatherproofing Nail Co., Baltimore, Md., manufactures Capnol roofing nails, which have been favorably introduced and extensively used in all parts of the United States. As an indication of their efficiency and growing popularity many duplicate orders are being booked for them, and the company has recently installed additional machinery for their manufacture. It has also placed an order for 200 tons of pressed wire, which is very durable, and of which these nails are made.

From Acorn to Oak.

An example of how business institutions can center attention upon the advantages of their particular cities and towns is strikingly shown by the plan followed by the Virginia Bridge & Iron Co. A stamp symbolic of the growth of Roanoke and a leaflet descriptive of the city are enclosed in every letter sent out from the company's office, and as it has a large volume of correspondence extending over all parts of the country, it is readily seen how the city's advantages are broadly advertised. The central feature of this stamp is an oak tree, above which is printed the inscription "Acorn to Oak. Watch Roanoke," the inference being that just as the sturdy, substantial oak tree comes from the acorn, so has Roanoke from a small beginning become a strong, substantial business community. The stamp and catch phrase were both designed by President C. Edwin Michael of the Virginia Bridge & Iron Co. In this and many other ways are the business institutions of the South, especially the large ones, in a position to be of incalculable benefit to their various communities. Such work reflects the broad progressiveness of this company in that it is not alone content in building up its own business, but is trying as well to build up the city in which it is located.

A Large Circuit-Breaker Installation

The construction of a circuit-breaker for use on heavy alternating-current circuits presents a difficult problem to the designing electrical engineer. What is said to be the largest alternating-current circuit-breaker yet built is installed in the worsted mills of the American Woolen Co. at Lawrence, Mass., and protects a 600-volt 40-cycle turbo alternator. It is a triple-pole solenoid-operated type C Form K2 breaker built by the General Electric Co., Schenectady, N. Y., and has a current carrying capacity of 12,000 amperes continuously without overheating. In its design a large amount of radiating surface was provided and uniform distribution of the current throughout the various parts was ensured by subdividing the contact brushes and the studs of each pole into six sections, each section insulated from the others. Each pole of the circuit-breaker is operated by a separate solenoid mechanism so connected that the entire triple-pole breaker is controlled by a single control switch on the switchboard panel. The open and closed positions of the breaker are indicated by pilot lamps located at the controlling switch. To obviate the necessity of opening an arc at the control switch, the circuit of the closing coils is opened by relays located near the circuit-breaker after the latter closes. The circuit-breaker trip coils are opened by auxiliary switches on it, which open when the breaker itself opens. The device is made automatic by the use of current transformers and relays. The circuit-breaker, solenoids and control relays are mounted on specially designed hardwood supporting framework made to conform to the perimeter of the turbine to which the framework is secured. The breaker has now been in service for several months, and is operating satisfactorily. Be-

fore shipment, after being well tested for purposes of adjustment and to discover any weak points in construction, it was subjected to thorough mechanical endurance tests under conditions more severe, it is said, than it could be expected to endure in actual service.

Developing Direct Trade Between Producer and Consumer.

The Albemarle Orchard Co., Charlottesville, Va., grower of the celebrated Albemarle Pippins and other varieties of exceptionally fine apples, is developing a direct trade with consumers throughout the country. This company wraps every apple carefully in paper, packs them in boxes or barrels, and ships direct from its orchards or packing-house to consumers, thus eliminating commission agents and enabling buyers to deal direct with the grower. The Albemarle Pippin is probably the most noted eating apple grown in America. For many years it was almost impossible to secure the best grade of Albemarle Pippins, because the entire product of the Virginia orchards producing these apples were shipped direct to England at a much higher price than the American market would pay. This came about, as has often been stated, by the shipment some years ago of a barrel of these Albemarle Pippins to Queen Victoria as a Christmas present from some Englishman then living in Virginia. Out of that Christmas present came such a demand for these apples that the English market took them at a high price, and they went direct from the growers to London. With the development of the industry an increased supply has made it possible for American consumers to secure Albemarle Pippins of the finest quality, and the Albemarle Orchard Co. is making a specialty of handling them. At Rockledge, Fla., G. S. Hardee, as grower of fine oranges and grapefruit, has for some years been developing a direct trade with the consumer, shipping the finest grade of oranges and grapefruit direct from his orchards to buyers in various parts of the country. His oranges and grapefruit are of such exceptionally fine character that they very rarely get into the hands of commission merchants, as individual buyers throughout the country take the bulk of his crop. In the same State the Atwood Company has for several years been giving much attention to the shipment of grapefruit to consumers, carrying on a wide advertising campaign through the leading magazines of the country. It takes a great deal of care and some capital and energy to develop a direct trade of this kind. Once established and properly handled, it expands by reason of the satisfaction of the consumers. The family learns to depend with absolute safety upon the quality of fruits which it buys from the grower, soon tells the story of its satisfaction to others, and thus helps to broaden the market. The development of direct trade between the producer and the consumer is possible in many directions, and what the three companies mentioned have accomplished in apple, orange and grapefruit industry is well worth studying by all other growers of fruit whose operations are on a sufficiently large scale to justify work of this character.

TRADE LITERATURE.

Illustrating Trump Products.

Bulletins illustrating various products of the Trump Manufacturing Co., Springfield, O., have been issued by that company. They present views of vertical and horizontal turbines, turbine driving centrifugal pump, Trump turbines, line of Trump turbines, standard 66-inch Trump runner, Trump-Francis type runner and other equipment.

Penberthy Engineer and Fireman.

The Penberthy Engineer and Fireman, a publication for the use of engineers and others, has been issued for October. This magazine is published by the Penberthy Press, 372 Holden Ave., Detroit, and contains, among others, a number of interesting articles from standard publications.

Electric Lamp Literature.

Bulletin No. 14, illustrating and describing Hylo-economical turn-down electric lamps, and Bulletin No. 13, illustrating and describing "Mazda" multiple lamps, have been issued by the National Electric Lamp Association, 4411 Hough avenue, Cleveland, O. The first mentioned of these bulletins is devoted to the performance and applications of the turn-down electric lamp, while the other presents information on "Mazda" multiple lamps and their uses.

Wire Springs and Specialties.

In a catalogue now being distributed by the Raymond Manufacturing Co., Corry, Pa., no attempt has been made to illustrate or de-

scribe all the styles of springs and specialties which this company manufactures. The publication is intended to convey, however, a general idea of the scope of the company's activities and present an idea of the class of springs it manufactures. The company's facilities are modern, and it invites inquiry regarding special spring problems.

The Apple of My Eye.

As the subject of a pamphlet, which presents a story of profits obtainable from North Georgia apples, the Piedmont Orchards, 755-756 Candler Building, Atlanta, has selected "The Apple of My Eye." This subject is suggestive, and the story based upon it is devoted to a presentation of advantages offered by orchard properties in Habersham county, Georgia, for profitable investment. The descriptive data contained in the pamphlet, together with its illustrations, are interesting and timely.

Sturtevant Center-Crank Engines.

Bulletin No. 182, issued by the B. F. Sturtevant Company, general offices Hyde Park, Mass., illustrates and describes Sturtevant horizontal center-crank engines, class HC-I. These engines were originally designed for direct connection to fans and electric generators manufactured by the Sturtevant Company, and embody many details of design and construction which, when modified for independent use, produce high-grade, quiet running, economical and durable engines. They are built for both throttling and automatic regulation, for high, medium and low pressures, and are capable of continuous operation with but little attention.

A Link-Belt Catalogue.

For the purpose of illustrating and describing various kinds of conveying machinery for sugar estates and refineries, the Link-Belt Company, Philadelphia, New York, Chicago and other cities, has issued catalogue No. 96. This company designs and constructs cane unloading machines, field transfers, cane conductors, juice strainers, bagasse carriers and feeders, intermediate carriers, ribbon and screw conveyors, sugar mixers, sugar elevators and conveyors, barrel and sack elevators, friction clutches, electric telephage, etc. The publication referred to comprehensively illustrates and describes these devices and presents a list of sugar estates upon which Link-Belt cane unloading machinery is in operation.

A Paper on the Rotary Kiln.

A paper on the rotary kiln, by Ellis Soper of Detroit, will be presented at the New York meeting of the American Society of Mechanical Engineers, 29 West 39th street, on November 9. One of the most important processes in the manufacture of Portland cement is the clinkering and burning process, now universally carried on in the rotary kiln. Mr. Soper's paper discusses the early development of the rotary kiln and its use in various industries, particularly the burning of Portland cement, gives a number of tests which show the chemical and physical changes taking place as the material passes through the kiln, takes up the proper design of kiln shells and supplies the law of diminishing returns to the fuel consumption and output of the kiln.

Anniversary Number of Grits and Grinds.

For the purpose of commemorating the 25th anniversary of the Norton Company and the 10th anniversary of the Norton Grinding Co., whose main offices are at Worcester, Mass., these companies have issued an anniversary number of Grits and Grinds, a Norton monthly publication devoted to grinding and grinding wheels. The publication of this anniversary edition was prompted by the Norton spirit of co-operation and a desire for a continuation of the friendly relations that have existed throughout the Norton organization since the days of the small shop. The magazine is attractive in its mechanical construction and presents an historical sketch of the Norton companies, together with photographs of their officers and employees and other interesting data.

Smith-Valle Air Compressors.

In Bulletin No. 549, illustrating and describing Smith-Valle air compressors, the Platt Iron Works Co., general offices Dayton, O., presents in condensed form information relative to standard types and sizes demanded by the trade. It has also endeavored to illustrate as nearly as possible the proper type applying to each list and to give correct tabular information relative to pipe openings, floor space, etc. But details of design are liable to change on different sizes, and pipe openings and other dimensions may be slight-

[Continued on Page 88.]

EXTRACTS FROM THE
THIRTIETH ANNUAL REPORT
OF

The Chicago, Rock Island & Pacific Railway Co.

Fiscal Year Ended June 30, 1910.

To the Stockholders:

The Board of Directors herewith submit their report of the operations and affairs of the Rock Island Lines for the fiscal year ended June 30, 1910.

The results of the operations for the year were as follows:

Total operating revenue (increase \$5,015,691.39, or 8.2 per cent.)	\$66,220,578 94
Operating expenses (increase \$5,555,873.50, or 13.1 per cent.)	48,063,368 91
Net operating revenue (decrease \$529,181.51, or 2.8 per cent.)	\$18,157,210 03
Taxes (increase \$495,834.12, or 26.7 per cent.)	2,876,700 67
Operating income	\$15,274,509 36
Miscellaneous income	223,231 82
Total income	\$15,497,741 18
Interest and rentals	10,749,809 10

Balance of income, after providing for all charges, being 6.3 per cent. on capital stock (\$75,000,000.00) \$4,747,881.08
Dividends paid (5 per cent. on capital stock) 2,743,272 01

Balance surplus for the year (decrease \$1,231,602.91, or 5.1 per cent.) \$1,004,609 08
For comparative income account in detail, see table on page 13 of pamphlet report.

CAPITAL STOCK.

The capital stock of the company outstanding at the close of the previous fiscal year was \$74,859,000.00, and has since been increased by the issue of \$17,000.00 in exchange for \$17,000.00 capital stock of the Burlington, Cedar Rapids and Northern Railway Company, and \$500.00 capital stock of the Rock Island and Peoria Railway Company, making the total amount of capital stock outstanding at June 30, 1910, \$74,877,200.00.

FUNDED DEBT.

During the year the funded debt, not including equipment notes, increased \$15,682,000.00 and equipment notes increased \$10,735,000.00, making an increase in total funded debt of \$26,417,000.00. Details will be found on page 17 of pamphlet report.

ROAD AND EQUIPMENT.

The cost of the "Investment since June 30, 1907," increased \$19,152,201.80 during the past year, which figure includes the value of new equipment purchased under trusts or otherwise, acquired, and \$2,311,942.84 for additions and betterments. For particulars see pages 18 and 19 of pamphlet report.

NEW LINES CONSTRUCTED.

The line between Amarillo, Tex., and Tucumcari, N. M., heretofore shown as under construction, has been completed between Amarillo, N. M., where it joins your main line to the Southwest, making the shortest line between Memphis, Tenn., and Southern California, via New Mexico and Arizona. 6.71 miles were placed in operation on August 10, 1909, and the remaining 64.00 miles were completed and placed in operation on May 9, 1910. The line is laid with 60, 65 and 70-pound steel rail on white oak ties. Standard station buildings have been erected at Vega, Adrian and Glenrio, Tex., and at Endee and San Jon, N. M. The distance via the new line thus opened from Memphis, Tenn., to Tucumcari, N. M., is 873.72 miles. The completion of this line made the use by this company of the Fort Worth & Denver City Railway from Amarillo, Tex., to Dalhart, Tex., 82.06 miles, unnecessary; the trackage rights were therefore relinquished May 9, 1910.

NEW EQUIPMENT.

Orders have been placed during the year for 184 locomotives, 5 passenger motor cars, 81 steel passenger train cars (including 10 horse cars), 7559 freight train cars and 7 service cars, of which 50 locomotives, 1 passenger motor car and 3559 freight train cars were mentioned in last year's report; 4 switch locomotives and 1 service car were also ordered, built at the company's shops. There were received and placed in service 80 locomotives, 97 steel passenger train cars, 3 passenger motor cars, 3741 freight train cars and 6 service cars. There are to be delivered between June 30 and December 31, 1910, 104 locomotives, 73 steel passenger train cars, 10 horse cars, 2 passenger motor cars, 3369 freight train cars and 2 service cars, except that 4 mail cars are due in February, 1911. See details on pages 37, 39 and 40 of pamphlet report.

GENERAL.

There were located along the Rock Island Lines during the fiscal year, according to the records of the industrial department, one hundred and ninety-three new industries, estimated to have cost nearly fifteen million dollars, to employ over eighty-seven hundred men and to create an annual movement of fifty-three thousand carloads of revenue freight.

Changes in industrial side tracks are as follows: Eleven built to coal mines and eighty-eight to private industries, also two mine tracks and thirty-three tracks to other industries were extended.

During the year automatic block signals were installed and placed in operation from Muscatine, Ia., to Eldon, Mo.; from St. Joseph, Mo., to Rushville, Mo.; from Iowa City, Ia., to Neola, Ia.; from West Liberty, Ia., to Linn Junction, Ia., and from Irving, Tex., to Dallas, Tex.; 288.2 miles. The expenditure during the year for the construction of the signals was \$430,755.55. The total expenditure to June 30, 1910, for the construction of block signals was \$968,192.22, which figures include the cost of 734.4 miles completed and placed in operation and 233.5 miles under construction.

The telephone system of train dispatching was installed during the year on 1146.3 miles of road, and at June 30, 1910, the telephone system was in use on 1022.1 miles of your railroad, representing a total expenditure of \$162,557.16, which figures include the entire cost of the poles, wire, etc., on the new line from Amarillo, Tex., to Tucumcari, N. M.

During the year the expenditures for maintenance of your property have been larger than for preceding years. Attention is invited to detailed information concerning expenditures for ties, rails, ballast, bridges, etc., on pages 33, 35 and 36 of pamphlet report.

Your company expended \$932,042.05 during the year for construction of additional and improved terminal facilities. These figures cover new facilities and the completion of those previously reported.

Attention is called to the continued increase in taxes, amounting to \$605,836.12, or 26.68 per cent., as compared with an increase of \$180,969.76, or 25.87 per cent., last year, making 1910 taxes \$1,086,865.88 higher than those of 1908, an increase of 60.72 per cent. Of this year's increase \$113,992.42 is on account of the new federal excise tax on net income; the remainder consists of increases in taxes in various States, only a small portion of which is occasioned by the construction of new lines.

Your company advanced during the year towards the construction, equipment and operating deficit of The Trinity & Brazos Valley Railway \$403,351.86, making the total advances to June 30, 1910, \$2,333,992.72, of which \$687,247.69 was reimbursed out of the proceeds of bonds of The Colorado & Southern Railway Company, leaving \$1,646,745.03 outstanding advances.

Advances during the year for Houston, Tex., terminals were \$147,883.83, making the total advances to June 30, 1910, \$450,985.96. First mortgage bonds of the Houston Belt & Terminal Railway Company were received in settlement of \$277,669.55, leaving \$173,316.41 outstanding advances.

On January 1, 1910, there was placed in effect a pension system, which provides that employees, who after long years of faithful service, have reached an age when they are unequal to the performance of their duties, will be retired and receive from your company monthly incomes during the remainder of their lives, based on their salary for the last ten years next preceding retirement, and the entire length of continuous service with your company. By this pension system your company hopes to build up among its employees a feeling of permanency in their employment and interest in the company's welfare, and a desire to remain in and devote their best efforts to the company's service. The total cost to your company for pensions paid, and the expense of administration of the system for the six months ended June 30, 1910, has been \$12,037.64, and it is estimated that this system will cost approximately \$30,000 during the ensuing fiscal year.

As announced in last year's report, because of the supervision of your company's accounts by the Interstate Commerce Commission, it is considered unnecessary to procure the certification of these accounts by an independent auditor.

By order of the Board of Directors,

H. U. MUDGE, President.

October 24, 1910.

ROCK ISLAND LINES—INCOME ACCOUNT, YEAR ENDED JUNE 30, 1910, COMPARED WITH PREVIOUS YEAR.

	1909-10.	1908-09.	Increase.	P. et.	Decrease.	P. et.
	8,043.59	8,026.38	17.21	.21		
Average mileage operated.....						
Revenue from transportation:						
Freight.....	\$42,218,880 84	\$39,158,053 16	\$3,060,827 68	7.82		
Passenger.....	19,378,174 27	17,883,378 99	1,494,795 28	8.36		
Mail.....	1,448,435 51	1,429,829 62	18,605 89	1.30		
Express.....	1,927,245 61	1,626,931 53	300,314 08	18.46		
Miscellaneous.....	774,380 24	720,280 57	54,099 67	7.51		
Total transportation revenue.....	\$65,747,116 47	\$60,818,473 87	\$4,928,642 60	8.10		
Revenue from operations other than transportation.....	473,662 47	206,413 08	267,249 39	29.22		
Total operating revenue.....	\$66,220,578 94	\$61,024,886 95	\$5,195,691 99	8.23		
Operating expenses:						
Maintenance of way and structures.....	\$10,673,287 02	\$9,651,879 26	\$1,021,407 76	17.91		
Maintenance of equipment.....	8,455,745 72	7,512,888 55	942,857 17	12.55		
Traffic expenses.....	2,195,262 59	1,441,214 58	754,047 81	24.57		
Transportation expenses.....	25,195,578 74	22,848,052 39	2,347,526 35	19.27		
General expenses.....	1,949,345 04	1,639,509 51	309,835 53	17.47		
Total operating expenses.....	\$48,063,368 91	\$42,543,405 41	\$5,519,963 50	13.07		
Net operating revenue.....	\$18,157,210 03	\$18,671,391 54	-\$514,181 51	2.79		
Taxes.....	2,876,700 67	2,270,864 55	\$605,836 12	26.68		
Operating income.....	\$15,274,509 36	\$16,400,526 99	-\$1,126,017 63	6.87		
Outside operations (debit balance).....	\$135,891 29	\$145,201 11	-\$9,309 18	6.63		
Hire of equipment (debit balance).....	1,171,066 25	812,116 65	\$358,950 29	44.20		
Other income.....	1,553,189 33	1,109,788 05	\$443,401 28	32.32		
Total.....	\$223,231 82	\$211,479 89	\$11,751 93	5.53		
Total income.....	\$15,497,741 18	\$16,611,507 88	-\$1,113,766 70	6.71		
Interest.....	\$9,129,874 61	\$8,861,223 05	\$268,651 56	3.03		
Rentals.....	1,547,402 01	1,577,966 93	-\$30,564 92	1.91		
Betterments on leased lines.....	72,583 48	16,577 16	\$55,906 32	337.85		
Total charges.....	\$10,749,809 10	\$10,445,767 14	\$304,041 96	2.91		
Balance of income (available for dividends).....	\$4,747,881 08	\$6,166,230 74	-\$1,418,349 66	23.00		
Dividends.....	2,743,272 01	3,339,018 75	-\$595,746 74	4.75		
Balance surplus (carried to credit of profit and loss).....	\$1,004,609 08	\$2,827,211 99	-\$1,822,602 91	55.38		

DIVIDENDS DECLARED DURING YEAR ENDED JUNE 30, 1910.

Dividend No. 117, 1 1/2 per cent., paid October, 1909.....	\$1,210,000 25
Dividend No. 118, 1 per cent., paid January, 1910.....	748,575 09
Dividend No. 119, 1 1/4 per cent., paid April, 1910.....	935,938 75
Dividend No. 120, 1 per cent., paid July, 1910.....	748,752 00
Total, 5 per cent.....	\$3,743,272 00

PROFIT AND LOSS.

Credit balance, June 30, 1909.....	\$17,767,290 51
Surplus for year ended June 30, 1910.....	\$1,004,609 08
Interest prior to current fiscal year on advances for construction.....	171,912 62
Sundry adjustments not affecting current year's income.....	25,976 95
	\$1,212,498 65
Loss:	
Discount on bonds issued and sold, commission and premium on loan made, and loss on lands sold.....	\$996,710 74
Depreciation on:	
Tracks removed.....	\$59,439 00
Structures sold, removed or destroyed.....	93,131 24
Equipment sold, dismantled or destroyed.....	527,662 62
	680,232 86
	\$1,676,943 60
	\$74,111 93

CREDIT BALANCE, JUNE 30, 1910.

Credit balance, June 30, 1910.....	\$17,292,815 56
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CONDENSED GENERAL BALANCE SHEET, JUNE 30, 1910, AND COMPARISON WITH PREVIOUS YEAR.

	1910.	1909.	Increase.	Decrease.
Property Investment:				
Road and Equipment:				
Investment to June 30, 1907.....	\$255,585,343 24	\$255,585,343 24		
Investment since June 30, 1907.....	25,704,459 09	6,552,257 29	\$19,152,201 80	
Reserve for accrued depreciation—credit.....	338,009 84	223,108 44	\$114,901 59	
Total road and equipment.....	\$280,629,792 19	\$262,360,708 97	\$18,269,083 22	
Securities:				
Securities of proprietary, affiliated and controlled companies—pledged (carried at nominal value).....	\$3 00	\$2,002 00		\$1,999 00
Securities of proprietary, affiliated and controlled companies—unpledged.....	9,019,834 25	9,306,479 53		\$286,645 28
Other Investments:				
Advances to proprietary, affiliated and controlled companies for construction, equipment and betterments.....	5,511,717 39	4,868,809 14	\$642,908 25	
Miscellaneous investments.....	1,733,496 55	2,006,152 87		\$272,656 32
Total property investment.....	\$297,223,943 68	\$278,447,935 73	\$18,776,007 95	
Working Assets:				
Cash.....	\$4,511,469 59	\$3,851,068 00	\$660,401 59	
Securities issued or assumed—held in treasury.....	4,227 50	1,371 17	2,856 33	
Marketable securities.....	17,081,140 72	12,382,882 86	4,698,257 86	
Loans and bills receivable.....	596,515 44	1,918,349 65		\$1,321,834 21
Traffic and car-service balances due from other companies.....	299,506 92	290,751 59	8,755 33	
Net balance due from agents and conductors.....	1,142,880 35	992,598 61	150,281 74	
Miscellaneous accounts receivable.....	2,839,534 25	2,222,896 29	616,637 96	
Materials and supplies.....	6,224,132 74	5,703,146 81	520,985 93	
Other working assets.....	1,549,556 29	1,244,593 36	304,962 93	
Total working assets.....	\$34,329,556 71	\$27,677,829 85	\$6,651,726 86	
Accrued Income not due:				
Unmatured interest, dividends and rents receivable.....	\$392,302 46	\$293,323 16	\$98,979 30	
Deferred Debit Items:				
Advances.....	\$1,534,707 44	\$1,632,560 44		\$98,283 00
Rents and insurance paid in advance.....	151,382 30	147,915 23	\$3,467 07	
Special deposits (see note on page 15 of pamphlet report).....	7,798,005 47	59,784 76	7,738,220 71	
Other deferred debit items.....	1,433,345 22	785,861 26	647,483 96	
Total deferred debit items.....	\$10,917,440 39	\$2,626,161 69	\$8,291,278 70	
Grand total.....	\$342,853,143 21	\$306,976,640 43	\$35,876,502 78	

Note.—In stating the assets and liabilities of the companies forming the Rock Island Lines, the holdings of The Chicago, Rock Island & Pacific Railway Company in the bonds and capital stock of the auxiliary lines, together with loans between the various companies, have been eliminated from the liabilities and a like reduction made in the assets pertaining thereto; the figures shown, therefore, represent the book value of the assets and the liabilities without duplication.

	Liabilities.	1909.	Increase.	Decrease.
Stock.	1910.			
Capital stock.	\$75,000,000 00	\$75,000,000 00		
Mortgage, Bonded and Secured Debt:				
Funded debt.	228,002,000 00	201,525,000 00	\$26,477,000 00	
Total capital liabilities.	\$303,002,000 00	\$276,525,000 00	\$26,477,000 00	
Working Liabilities:				
Loans and bills payable.		\$1,590,000 00		\$1,590,000 00
Traffic and car-service balances due to other companies.	\$795,878 70	841,669 54		45,790 84
Audited vouchers and wages unpaid.	5,254,493 94	4,557,654 52	696,839 42	
Miscellaneous accounts payable.	323,070 38	241,183 36	81,887 02	
Matured interest, dividends and rents unpaid.	2,683,910 84	2,683,907 07	303 77	
Matured mortgage, bonded and secured debt unpaid.	23,000 00	3,000 00	20,000 00	
Working advances due to other companies.	189,799 69	188,501 40	1,298 29	
Other working liabilities.	735,643 55	684,425 64	51,217 91	
Total working liabilities.	\$10,005,797 10	\$10,790,041 53		\$784,244 43
Accrued Liabilities not due:				
Unmatured interest, dividends and rents payable.	\$1,808,001 10	\$1,567,647 21	\$240,353 89	
Taxes accrued.	1,354,223 48	1,024,339 04	329,884 44	
Total accrued liabilities not due.	\$3,162,224 58	\$2,592,046 25	\$570,184 33	
Deferred Credit Items:				
Operating reserves.	\$1,193,907 38	\$852,115 02	\$341,792 36	
Other deferred credit items (see note below).	8,132,024 86	385,809 36	7,746,215 50	
Total deferred credit items.	\$9,325,932 24	\$1,237,924 38	\$8,088,007 86	
Grand total liabilities.	\$325,455,959 92	\$290,145,912 16	\$34,350,947 76	
Appropriated Surplus:				
Additions to property since June 30, 1907, through income.	64,367 76	64,376 76		
Profit and Loss:				
Balance.	17,292,815 56	17,767,260 51		\$474,444 95
Grand total.	\$342,853,143 24	\$308,976,640 43	\$33,876,502 81	

Note.—1910 figures include \$7,657,573.99 contract consideration for new trust equipment not delivered. Cash is on deposit with trustees and is included in "Special Deposits" under "Deferred Credit Items."

FINANCIAL CHANGES DURING YEAR ENDED JUNE 30, 1910.

Resources:	
Cash on hand June 30, 1909.	\$3,851,068 00
Funded debt increased—see page 29 of pamphlet report.	\$26,477,000 00
Securities of proprietary, affiliated and controlled companies—pledged (decrease).	1,999 00
Securities of proprietary, affiliated and controlled companies—unpledged (decrease).	576,645 28
Miscellaneous investments (decrease).	326,456 32
	\$27,382,100 60

Changes in working, accrued and deferred accounts, as follows:

Decrease in Assets:	
Loans and bills receivable.	\$421,833 61
Advances.	98,283 60
	\$520,116 61
Increase in Liabilities:	
Audited vouchers and wages unpaid.	\$696,839 42
Miscellaneous accounts payable.	81,887 02
Matured interest, dividends and rents unpaid.	303 77
Matured mortgage, bonded and secured debt unpaid.	20,000 00
Working advances due to other companies.	1,298 29
Other working liabilities.	51,217 91
Unmatured interest, dividends and rents payable.	240,353 89
Taxes accrued.	329,884 44
Operating reserves.	341,792 36
Other deferred credit items.	7,746,215 50
	9,509,738 60
	\$10,029,855 21

Less: increase in Assets:

Securities issued or assumed—held in treasury.	\$2,854 33
Marketable securities.	4,628,263 86
Traffic and car-service balances due from other companies.	38,753 33
Net balance due from agents and conductors.	150,281 74
Miscellaneous accounts receivable.	606,661 05
Materials and supplies.	520,583 92
Other working assets.	296,362 64
Unmatured interest, dividends and rents receivable.	158,979 30
Rents and insurance paid in advance.	3,467 07
Special deposits.	7,747,220 67
Other deferred debit items.	647,483 96
	\$14,931,118 88

Decrease in Liabilities:

Loans and bills payable.	1,590,000 00
Traffic and car-service balances due to other companies.	45,790 84
	\$1,635,790 84

16,566,909 72
6,537,954 51
20,845,046 09

Total to be accounted for.

\$24,696,114 09

Applied as follows:

Investment since June 30, 1907 (increase)—additions and betterments, additional equipment, etc., as per details on page 18 of pamphlet report.	\$19,152,201 80
Less increase in reserve for accrued depreciation.	114,901 50
	\$19,037,300 30
Advances to proprietary, affiliated and controlled companies for construction, equipment and betterments (increase).	642,908 25
Net debit to profit and loss account.	474,444 95
	20,154,653 50

Balance, cash on hand June 30, 1910.

\$4,541,460 59

FUNDED DEBT CHANGES DURING YEAR ENDED JUNE 30, 1910.

Funded debt, including equipment notes, June 30, 1909:	
Funded debt.	\$195,625,000 00
Equipment notes.	5,900,000 00
	\$201,525,000 00

This has been changed during the year as follows:

Funded debt increased:

By the issue of The Chicago, Rock Island & Pacific

Railway Co.'s first and refunding mortgage gold

bonds, viz.:

For additions, betterments and equipment, 1910

fund.

For an equal amount of general mortgage gold

bonds, issued January 1, 1910, for additions and

betterments, said general mortgage gold bonds

having been deposited with trustees of first and

refunding gold bond mortgage.

For redemption of matured obligations:

The Chicago, Rock Island & Pacific Railway Co.'s

gold bonds of 1902, series H, matured May 1, 1910.

Choctaw, Oklahoma & Gulf Railroad Co.'s equip-

ment trust notes, series C, matured April 1, 1910.

For acquisition of securities:

Tuacumcari & Memphis Railway Co.'s first mortgage

gold 6 per cent. bonds, par \$1,000,000.00.

\$2,500,000 00

1,494,000 00

220,000 00

982,000 00

\$6,196,000 00

Amount brought forward.

\$6,196,000 00

By the issue of Rock Island, Arkansas & Louisiana

Railroad Co.'s first mortgage gold 4½ per cent bonds.

11,000,000 00

\$17,196,000 00

Less:

By the redemption of matured obligations as follows:

The Chicago, Rock Island & Pacific Rail-

way Co.'s gold bonds of 1902, matured

May 1, 1910.

\$1,494,000 00

Little Rock Bridge Co.'s bonds, matured

June 1, 1910.

20,000 00

1,514,000 00

\$15,682,000 00

Equipment notes increased:

By the issue of The Chicago, Rock Island & Pacific

Railway Co.'s:

Four and one-half per cent. equipment gold bonds,

series C.

\$5,300,000 00

Four and one-half per cent. equipment gold bonds,

series D.

6,750,000 00

\$12,050,000 00

Less:

By the redemption of matured obligations as follows:

The Chicago, Rock Island & Pacific Railway

Co.'s equipment 4½ per cent. gold notes,

matured as follows:

August 1, 1909.

\$325,000 00

February 1, 1910.

325,000 00

650,000 00

The Chicago, Rock Island & Pacific Railway

Co.'s equipment series B 6 per cent. notes,

matured as follows:

October 15, 1909.

\$60,000 00

April 15, 1910.

60,000 00

120,000 00

The Chicago, Rock Island & Pacific Railway Co.'s

equipment series C 4½ per cent. gold bonds, matured

April 1, 1910.

265,000 00

Choctaw, Oklahoma & Gulf Railroad Co.'s equipment

trust notes as above.

220,000 00

\$1,255,000 00

Net increase in equipment notes.

10,795,000 00

Net increase in funded and other fixed interest-bearing debt.

26,477,000 00

Funded debt, including equipment notes, June 30, 1910:

Funded debt.

\$211,307,000 00

Equipment notes.

16,895,000 00

\$228,202,000 00

Total.

\$228,202,000 00

ROAD AND EQUIPMENT—INVESTMENT SINCE JUNE 30, 1907.—CHANGES DURING

YEAR ENDED JUNE 30, 1910.

Balance June 30, 1909, as per balance sheet, page 14 of pamphlet report.

\$6,552,257 29

Changes during the year:

Additions:

Additions and betterments, current year (not including equipment),

see page 19 of pamphlet report.

\$3,311,942 84

Disbursements for construction and equipment of Rock Island,

Arkansas & Louisiana Railroad Co.'s property.

1,002,964 64

Disbursements for old construction liabilities of Choctaw, Oklahoma

& Gulf Railroad Co.

1,552 41

Disbursements for construction of line Amarillo, Tex., to Texas-New

Mexico State line.

752,094 03

Disbursements for construction of Tuacumcari & Memphis Railway

(property of Chicago, Rock Island & El Paso Railway Co.), Texas-

New Mexico State line to Tuacumcari, N. M.

894,458 17

Disbursements for additional and improved equipment:

1 Business car.

\$8,250 00

2 Business cars converted from dining cars.

8,661 57

2 Buffet cars converted from parlor cars.

1,160 00

1 Locomotive pile driver.

11,650 00

10 Locomotive tenders (built at shops).

23,059 44

\$52,781 01

New appliances for existing equipment, required

by Federal and State laws.

\$67,856 25

Other new appliances for existing equipment.

16,065 03

83,861 28

136,642 29

Central Trust Co. of New York, equipment purchase under indenture

of April 1, 1909.

6,061,039 35

Bankers' Trust Co., equipment purchase under indenture of May 2,

1910.

8,026,003 45

\$20,186,697 18

Deductions:

Rock Island Improvement Co., equipment purchase under

indenture of February 1, 1907—lighting appliances trans-

ferred and rebates, less inspection and freight charges.

\$166,000 11

Reserve for replacement of destroyed equipment which,

under mortgages and equipment trust agreements, must

be replaced.

106,403 42

Value of equipment destroyed, dismantled or sold during

the past fiscal year (exclusive of equipment which, under

mortgages or equipment trust agreements, must be re-

placed). Such value less salvage, was charged to opera-

ting expenses and profit and loss.

748,219 57

Adjustment of charges for construction of track from T. &

P. crossing, Dallas, Tex., to connection with H. & T. C. R.

R., Dallas, Tex.

893 92

Adjustment of charges for construction of track, Irving,

Tex., to Carrollton, Tex.

12,918 35

1,034,495 38

Net increase.

19,152,201 80

Balance, June 30, 1910, as per balance sheet, page 14 of pamphlet report.

\$25,704,459 09

EXPENDITURES FOR ADDITIONS AND BETTERMENTS, YEAR ENDED JUNE 30, 1910.

Right of way and station grounds.

\$154,434 78

Widening cuts and fills.

192,919 03

Protection of banks.

FUNDED DEBT, JUNE 30, 1910, COMPARED WITH PREVIOUS YEAR.

FUNDED DEBT, JUNE 30, 1910, COMPARED WITH PREVIOUS YEAR.									
Index No.	Description of debt.	When due.	Amount outstanding June 30.			Annual interest on debt outstanding June 30, 1910.			
			1910.	1909.	Increase or decrease.	Rate.	Amount.	When payable.	
The Chicago, Rock Island & Pacific Railway Co.:									
1	First and refunding mortgage gold bonds.....	1934	\$86,118,000 00	\$79,922,000 00	\$6,196,000 00	4	\$3,444,729 00	April 1, Oct. 1	
2	First mortgage bonds.....	1917	12,500,000 00	12,500,000 00	.....	6	750,000 00	Jan. 1, July 1
3	General mortgage gold bonds.....	1948	61,581,000 00	61,581,000 00	.....	4	2,463,240 00	Jan. 1, July 1
4	Gold bonds of 1902.....	1918	11,932,000 00	12,446,000 00	1,514,000 00	4	478,080 00	May 1, Nov. 1	
			<u>\$172,151,000 00</u>	<u>\$167,449,000 00</u>	<u>\$4,702,000 00</u>		<u>\$7,136,040 00</u>		
Burlington, Cedar Rapids & Northern Railway Co.:									
5	Consolidated first mortgage bonds.....	1934	\$11,000,000 00	\$11,000,000 00	.....	5	\$550,000 00	April 1, Oct. 1
6	First mortgage bonds—Cedar Rapids, Iowa Falls & Northwestern Railroad Co.....	1921	1,905,000 00	1,905,000 00	.....	5	95,250 00	April 1, Oct. 1
7	First mortgage bonds—The Minneapolis & St. Louis Railroad Co.....	1927	150,000 00	150,000 00	.....	7	10,500 00	June 1, Dec. 1
			<u>\$13,055,000 00</u>	<u>\$13,055,000 00</u>	<u>.....</u>		<u>\$655,750 00</u>		
Rock Island & Peoria Railway Co.:									
8	Consolidated first mortgage bonds.....	1925	\$450,000 00	\$450,000 00	.....	6	\$27,000 00	Jan. 1, July 1
Choctaw, Oklahoma & Gulf Railroad Co.:									
9	General mortgage bonds.....	1919	\$5,500,000 00	\$5,500,000 00	.....	5	\$275,000 00	Jan. 1, July 1
10	First mortgage gold bonds—Choctaw & Memphis Railroad Co.....	1949	3,525,000 00	3,525,000 00	.....	5	176,250 00	Jan. 1, July 1
11	Consolidated mortgage gold bonds.....	1952	5,411,000 00	5,411,000 00	.....	5	270,550 00	May 1, Nov. 1
12	First mortgage gold bonds—Little Rock Bridge Co.....	1919	215,000 00	255,000 00	\$20,000 00	6	12,900 00	Jan. 1, July 1	
			<u>\$14,651,000 00</u>	<u>\$14,671,000 00</u>	<u>\$20,000 00</u>		<u>\$734,700 00</u>		
Rock Island, Arkansas and Louisiana Railroad Co.:									
13	First mortgage gold bonds.....	1934	\$11,000,000 00	.....	\$11,000,000 00	4½	\$495,000 00	Mar. 1, Sept. 1
	Total funded debt.....		<u>\$211,307,000 00</u>	<u>\$195,625,000 00</u>	<u>\$15,682,000 00</u>		<u>\$9,948,490 00</u>		
The Chicago, Rock Island & Pacific Railway Co.:									
14	Equipment gold notes.....	1917	\$4,550,000 00	\$5,200,000 00	\$650,000 00	4½	\$204,750 00	Feb. 1, Aug. 1	
15	Equipment notes, series B.....	1913	300,000 00	480,000 00	180,000 00	6	21,600 00	April 15, Oct. 15	
16	Equipment gold bonds, series C.....	1919	5,035,000 00	.....	5,035,000 00	4½	226,575 00	April 1, Oct. 1
17	Equipment gold bonds, series D.....	1925	6,750,000 00	.....	6,750,000 00	4½	303,750 00	May 1, Nov. 1
			<u>\$16,635,000 00</u>	<u>\$12,480,000 00</u>	<u>\$4,155,000 00</u>		<u>\$756,675 00</u>		
Choctaw, Oklahoma & Gulf Railroad Co.:									
18	Equipment trust notes, series C.....	1910	.....	220,000 00	220,000 00	.....	.....	Paid April 1, '10
	Total equipment trust notes.....		<u>\$16,635,000 00</u>	<u>\$5,900,000 00</u>	<u>\$10,735,000 00</u>		<u>\$756,675 00</u>		
	Grand total.....		<u>\$228,002,000 00</u>	<u>\$201,525,000 00</u>	<u>\$26,477,000 00</u>		<u>\$9,805,165 00</u>		

RATIOS, YEAR ENDED JUNE 30, 1910, COMPARED WITH PREVIOUS YEAR.

	1909-10.	1908-09.	Increase.	Decrease.
Ratio of each class of revenue to total operating revenue:				
Freight.....	63.75	64.00	.....	.25
Passenger.....	29.26	29.23	.03	.....
Mail.....	2.19	2.33	.....	.14
Express.....	2.91	2.66	.25	.....
Miscellaneous.....	1.17	1.18	.....	.01
Operations other than transportation.....	.72	.69	.12	.....
Total.....	<u>100.00</u>	<u>100.00</u>	<u>.....</u>	<u>.....</u>
Ratio of each class of expenses to total operating expenses:				
Maintenance of way and structures.....	22.20	21.29	.91	.....
Maintenance of equipment.....	17.59	17.67	.....	.08
Traffic expenses.....	3.73	3.39	.34	.....
Transportation expenses.....	52.42	53.74	.....	1.32
General expenses.....	4.06	3.91	.15	.....
Total.....	<u>100.00</u>	<u>100.00</u>	<u>.....</u>	<u>.....</u>
Ratio of each class of expenses to total operating revenue:				
Maintenance of way and structures.....	16.12	14.79	1.33	.....
Maintenance of equipment.....	12.77	12.28	.49	.....
Traffic expenses.....	2.71	2.36	.35	.....
Transportation expenses.....	38.05	37.34	.71	.....
General expenses.....	2.91	2.71	.20	.....
Total expenses.....	<u>72.59</u>	<u>69.48</u>	<u>3.11</u>	<u>.....</u>
Ratio of debit items in the income account to gross income (operating revenue and other income):				
Operating expenses.....	72.35	69.25	3.10	.....
Taxes.....	4.33	3.70	.63	.....
Interest.....	13.74	14.43	.....	.69
Rentals.....	2.33	2.55	.....	.22
Betterments on leased lines.....	.11	.03	.08	.....
Total of all charges.....	<u>92.86</u>	<u>89.96</u>	<u>2.90</u>	<u>.....</u>
Balance available for dividends.....	7.14	10.04	.....	2.90
Dividends.....	5.63	6.40	.....	.77
Surplus carried to profit and loss.....	<u>1.51</u>	<u>3.64</u>	<u>2.13</u>	<u>.....</u>

MILEAGE AND TRAFFIC STATISTICS, YEAR ENDED JUNE 30, 1910, COMPARED WITH PREVIOUS YEAR.

	1909-10.	1908-09.	Increase.	Decrease.
Average miles of road operated.....	8,043.59	8,026.38	17.21	.....
Miles of road operated June 30.....	8,024.28	8,048.47	.....	24.19
Freight train miles.....	16,940,452	14,925,720	2,014,732	.....
Passenger train miles.....	17,914,890	16,411,550	1,503,340	.....
Mixed train miles.....	800,590	802,219	.....	1,629
Special train miles.....	119,838	48,815	71,023	.....
Total revenue train miles.....	<u>35,775,770</u>	<u>32,188,394</u>	<u>3,587,376</u>	<u>.....</u>
Non-revenue service train miles.....	959,117	1,003,336	.....	24,219
Total train miles.....	<u>36,734,887</u>	<u>33,191,730</u>	<u>3,543,157</u>	<u>.....</u>
Loaded freight car miles.....	303,144,536	274,607,839	28,446,697	.....
Empty freight car miles (excludes caboose car miles).....	122,398,560	107,768,069	14,630,491	.....
Total freight car miles (excludes caboose car miles).....	<u>425,543,096</u>	<u>382,375,908</u>	<u>43,167,188</u>	<u>.....</u>
Caboose car miles.....	16,982,780	15,093,577	1,889,203	.....
Grand total freight car miles.....	<u>442,525,876</u>	<u>397,469,485</u>	<u>45,056,391</u>	<u>.....</u>
Passenger car miles (including baggage, mail and express).....	96,082,351	88,998,444	7,083,907	.....
Passenger car miles (carrying passengers).....	70,283,304	67,352,505	2,930,799	.....
Number of tons moved—revenue freight.....	19,167,179	17,145,657	2,021,522	.....
Number of tons moved—company freight.....	5,972,748	5,086,522	886,226	.....
Number of tons moved—all freight.....	<u>25,139,927</u>	<u>22,232,179</u>	<u>2,907,748</u>	<u>.....</u>
Number of tons moved one mile—revenue freight.....	4,567,089,384	4,160,828,170	406,261,214	.....
Number of tons moved one mile—company freight.....	701,013,424	569,193,324	131,820,100	.....
Number of tons moved one mile—all freight.....	<u>5,268,102,808</u>	<u>4,730,021,494</u>	<u>538,081,314</u>	<u>.....</u>
Number of passengers carried.....	20,137,409	18,743,022	1,394,387	.....
Number of passengers carried one mile.....	1,016,385,259	952,679,695	63,705,563	.....

FREIGHT TRAFFIC STATISTICS, YEAR ENDED JUNE 30, 1910, COMPARED WITH PREVIOUS YEAR.

	1909-10.	1908-09.	Increase.	Decrease.
Revenue per ton mile.....	\$.0992	\$.0994	.....	\$.0002
Revenue per ton.....	2.293	2.284	.....	.009
Revenue per train mile.....	2.390	2.490	.....	.100
Revenue per car mile (excludes caboose car miles).....	.0992	.1024	.....	.0032

Revenue per mile of road.....	\$5,248.76	\$4,878.67	\$370.09	.....
Number of tons per train mile—revenue freight.....	257.43	264.55	.....	7.12
Number of tons per train mile—company freight.....	39.51	36.19	3.32	.....
Number of tons per train mile—all freight.....	<u>296.94</u>	<u>300.74</u>	<u>3.80</u>	<u>.....</u>
Number of tons per loaded car mile—revenue freight.....	15.97	15.15	.....	.82
Number of tons per loaded car mile—company freight.....	2.31	2.67	.....	.36
Number of tons per loaded car mile—all freight.....	<u>17.38</u>	<u>17.22</u>	<u>.16</u>	<u>.....</u>
Number of cars per train—loaded.....	17.06	17.44	.....	.38
Number of cars per train—empty.....	6.89	6.81	.....	.08
Number of cars per train—all.....	<u>23.95</u>	<u>24.28</u>	<u>.33</u>	<u>.....</u>
Average haul per ton—revenue freight (in miles).....	238.28	242.68	.....	4.40
Average haul per ton—company freight (in miles).....	117.37	111.90	5.47	.....
Average haul per ton—all freight (in miles).....	<u>209.75</u>	<u>212.76</u>	<u>3.01</u>	<u>.....</u>
Average ton miles of revenue freight per mile operated.....	567,792	548,394	19,398	.....

PASSENGER TRAFFIC AND PER MILE OF ROAD STATISTICS, YEAR ENDED JUNE 30, 1910, COMPARED WITH PREVIOUS YEAR.

	1909-10.	1908-09.	Increase.	Decrease.
Passenger Traffic.				
Revenue per passenger mile.....	\$.0191	\$.0188	\$.0003	.....
Revenue per passenger.....	.962	.954	.008	.....
Revenue per train mile (excluding mail, express, etc.).....	1.035	1.039	.....	.004
Revenue per train mile (including mail, express, etc.).....	1.226	1.234	.....	.008
Revenue per car mile (cars carrying passengers).....	.276	.296	.....	.020
Revenue per mile of road (excluding mail, express, etc.).....	\$2,409.14	\$2,228.08	\$181.06	.....
Revenue per mile of road (including mail, express, etc.).....	\$2,869.56	\$2,651.14	\$218.42	.....
Number of passengers per train mile.....	54.31	55.34	.....	1.03
Number of passengers per car mile (cars carrying passengers).....	14.46	14.14	.32	.....
Average distance carried (in miles).....	59.47	59.83	.....	.36
Number of cars per train.....	5.10	5.16	.....	.06
Average miles of revenue passengers per mile operated.....	126,369	118,694	7,666	.....
Per Mile of Road.				
Total operating revenue.....	\$8,232.71	\$7,622.97	\$609.74	.....
Operating expenses.....	5,396.11	5,296.72	99.39	.....
Net operating revenue.....	<u>\$2,836.60</u>	<u>\$2,326.25</u>	<u>\$510.35</u>	<u>.....</u>
Taxes.....	357.64	282.92	74.72	.....
Operating income.....	<u>\$1,898.96</u>	<u>\$2,043.33</u>	<u>.....</u>	<u>\$144.37</u>
Outside operations (debit balance).....	19.34	18.21	.....	1.13
Hire of equipment (debit balance).....	145.39	161.18	.....	15.79
Other income.....	192.72	145.74	46.98	.....
Total income.....	<u>\$1,926.71</u>	<u>\$2,069.68</u>	<u>.....</u>	<u>\$142.97</u>
Interest.....	\$1,135.05	\$1,104.01	\$31.04	.....
Rentals.....	192.34	195.35	.....	\$2.97
Betterments on lines leased from other companies*.....	9.01	2.67	6.34	.....
Total charges.....	<u>\$1,336.41</u>	<u>\$1,301.43</u>	<u>\$34.98</u>	<u>.....</u>
Balance of income (available for dividends).....	<u>\$590.27</u>	<u>\$768.25</u>	<u>.....</u>	<u>\$177.98</u>
Betterments on lines leased from other companies, per mile of the leased roads so improved?.....	\$33.88	\$89.96	.....	\$56.08

*Used average miles operated same as for other computations.

†Covers Keokuk & Des Moines Railway and Little Rock & Hot Springs Western Railroad.

CONDENSED INCOME ACCOUNT FOR THE TEN YEARS ENDED JUNE 30, 1910.

Year.	Average mileage operated.	Gross income.	Operating expenses and all other deductions from income other than interest.	Total net income.
1901.....	3,772.37	\$36,756,716 06	\$18,518,217 12	\$18,238,498 94
1902.....	3,955.93	39,529,945 06	19,284,533 44	19,245,427 62
1903.....	4,048.47	40,048,107 11	20,419,068 21	19,629,038 90
1904.....	4,266.14	46,303,225 67	24,325,605 07	21,977,620 60
1905.....	4,231.91	45,557,681 03	23,748,476 01	21,809,205 02
1906.....	4,218.07	52,353,635 31	27,719,693 55	24,633,941 76
1907.....	4,780.26	60,752,282 06	32,722,464 97	28,029,817 09
1908.....	4,969.53	58,612,830 33	34,481,506 00	24,131,324 33
1909.....	8,026.28	61,396,257 84	46,368,504 05	15,027,753 79
1910.....	8,043.59	66,413,816 76	52,596,065 07	13,817,751 69

Year.	Interest on funded debt, equipment notes and other notes.	Surplus applicable to dividends.	Less dividends declared.	Balance of income.
1901.....	\$2,931,980 00	\$5,296,518 94	\$1,569,715 00	\$3,727,783 94
1902.....	3,180,861 54	8,114,639 68	2,372,732 50	5,741,808 18
1903.....	6,056,186 39	9,572,911 51	4,689,766 50	4,892,145 01
1904.....	6,011,521 68	6,028,198 32	5,985,069 00	43,128 32
1905.....	7,096,055 85	4,733,199 17	4,676,622 00	66,487 17
1906.....	7,748,169 72	6,785,822 04	4,677,552 50	2,108,270 54
1907.....	8,279,900 02	8,750,517 07	4,116,728 00	4,633,789 07
1908.....	8,413,221 92	4,718,102 41	3,929,785 00	788,317 41
1909.....	8,861,223 05	6,166,230 74	3,930,918 75	2,236,311 99
1910.....	9,129,874 61	4,747,881 08	3,743,272 00	1,004,609 08

EXTRACTS FROM

FOURTEENTH ANNUAL REPORT

OF THE

St. Louis and San Francisco Railroad Company

FISCAL YEAR ENDED JUNE 30, 1910.

To the Stockholders:

The Directors herewith submit their report of the operations and affairs of the St. Louis & San Francisco Railroad Company's Lines (exclusive of the Chicago & Eastern Illinois Railroad) for the fiscal year ended June 30, 1910.

The results of operation for the fiscal year were as follows:

Operating revenue (increase \$3,408,853.33, or 9 per cent.)	\$41,165,939 37
Operating expenses (increase \$3,916,751.94, or 15.8 per cent.)	28,676,842 19
Net operating revenue (decrease \$507,797.71, or 3.9 per cent.)	\$12,489,097 18
Taxes	1,458,185 96
Miscellaneous income	\$11,030,911 22
Total income	\$13,331,339 94
Interest, rentals and other fixed charges	12,309,380 77
Net income after providing for all charges	\$1,121,959 17
Dividends paid—4 per cent. on first preferred stock	199,742 12
Surplus carried to profit and loss	\$922,217 05

The mileage and results of operation of the Orange & Northwestern Railroad and the Benmont, Sour Lake & Western Railway, which were included in the printed report for 1909, have been eliminated therefrom in the foregoing comparison, and also in all other comparative statements in this report. The two roads referred to were, during the past year, operated as separate properties and form parts of the New Orleans, Texas & Mexico Railroad Lines. See page 76 of pamphlet report, showing the mileage of roads comprising the lines of the New Orleans, Texas & Mexico Railroad.

The slight decrease, 88.100 of a mile in the average mileage operated, is caused by a remeasurement.

On pages 74, 75 and 76 of pamphlet report will be found details of the mileage of all the lines operated, owned or controlled by this Company.

CAPITAL STOCK.

There was no change during the fiscal year in the Capital Stock issued or outstanding.

FUNDED DEBT AND EQUIPMENT BONDS AND NOTES.

The outstanding funded debt at June 30, 1910, was	\$221,966,174 11
The outstanding equipment trust bonds and notes were	15,700,521 79
Total	\$237,666,695 90
The outstanding funded debt at June 30, 1909, was	\$199,339,619 30
Less that of B. S. L. & W. and O. & N. W. railroads	728,566 59
Total	\$198,611,052 71
The outstanding equipment trust bonds and notes were	15,033,551 99
Total	213,644,604 70
The net increase was	\$24,022,091 20

The balance of the Fort Smith & Van Buren Bridge Company First Mortgage 6 per cent. bonds were redeemed and cancelled during the year, and the mortgage was released of record. In May, 1910, \$1,644,000 of the Five-Year 5 per cent. Gold Notes of 1911 were redeemed and cancelled, and at the same time funds were deposited with the Trustee to redeem on July 1, 1910, the balance of that issue, amounting to \$5,856,000.

Funds were also deposited with the Mercantile Trust Company of New York for the payment at maturity (September 1, 1910) of \$492,000 of Memphis, Kansas & Colorado Railway Company First Mortgage 7 per cent. bonds.

The new issue of this Company's New Orleans, Texas & Mexico Division First Mortgage Thirty-Year Gold Bonds, dated March 1, 1910, is secured by a first mortgage dated May 17, 1910, on the property of the New Orleans, Texas & Mexico Railroad Company, the latter company assuming the payment of both principal and interest of the bonds.

The New Orleans, Texas & Mexico Railroad Company is operated separately and extends from New Orleans, La., to Brownsville, Texas, on the Mexican border, owning a half interest in the bridge across the Rio Grande River to Matamoros, where connection is made with the National Railways of Mexico. A profitable interchange of traffic with the Mexican lines should result, beginning with the opening of this new international line in September of this year. Your Company owns all of the capital stock, except Directors' shares, of the New Orleans, Texas & Mexico Railroad Company.

On pages 19 and 20 of pamphlet report will be found statements showing in detail the amount of new bond and note issues, as well as the amount of bonds and equipment obligations redeemed or exchanged during the year, and on page 28 of pamphlet report is given the details of securities remaining in the treasury as a current asset.

EQUIPMENT.

The following equipment was purchased during the fiscal year:

1. Under Trust Agreements:

- 250 Oil Tank Cars.
- 1000 Steel Coal Cars.
- 500 Steel Hopper Cars.
- 250 Steel Underframe Flat Cars.
- 150 Steel Underframe Caboose.
- 7 Steel Baggage.
- 6 Steel Chair Cars.
- 6 Steel Dining Cars.
- 5 Steel Combination Coach and Café.
- 10 Steel Combination Coach and Baggage.
- 6 Steel Combination Coach and Mail.
- 9 Steel Combination Baggage and Mail.
- 22 Steel Coaches.
- 20 Pacific Type Locomotives.
- 30 Consolidation Locomotives.
- 3 Brown Hoists.
- 3 Steam Wrecking Cranes.

2. Purchased for cash:

- 100 Commercial Ice Cars.

All of this additional equipment was received at June 30, 1910, with the exception of six Combination Passenger and Mail cars, five Combination Coach and Café cars and six Dining cars.

CONSTRUCTION.

During the fiscal year a branch was built between Marion and Hulbert, Ark., connecting the tracks of the Frisco with the Chicago, Rock Island & Pacific Railway at Hulbert, a distance of 5.49 miles. This cut-off shortens the distance for through traffic between the two lines and materially facilitates transfer of freight between the terminal yards of these lines, relieving the terminal situation in Memphis proper, which is often congested. Extensive yards were built at Marion to provide for such interchange.

GENERAL.

Much has been said of late respecting the obvious necessity of greater compensation for the railroads per unit of service rendered. In this connection it has been frequently stated that within the past few years rates have already been raised and that the actual rate basis is now higher than in the recent past. Figures refute this so far as "Frisco" is concerned. On our 1910 ton miles, if we had received the rates of 1907, our freight revenues would have been larger by \$33,729.32; at the rates of ten years ago, 1900, we would have had \$2,291,881.06 more freight earnings. Our passenger rate per mile in 1907 applied to our 1910 passenger miles would have yielded us a further increase of \$1,669,511.82. If the railroads are to serve the public adequately, net revenues must be preserved or increased by means of better rates, and not by poorer maintenance. The public cannot afford the latter method.

Your Company's property is receiving a substantial improvement in value by reason of the number of treated ties (creosote treatment) which are being put into the track, at an increased expense, borne by maintenance charges. This work was begun late in 1907. As of date June 30, 1910, more than three million creosoted ties had been used, at an additional cost for treatment and handling of more than one million dollars. The life of these treated ties is estimated at 15 years or more, or approximately two and one-half times the average life of the untreated ties. The benefit to the property in reduction of maintenance charges on this account will not be noticeable for several years.

At the close of the fiscal year new automatic electric block signals had been installed and were in use on 35 miles of road, and work of that character is being actively pushed upon 404 miles more, a good part of which will be in service before winter comes.

A strike of coal miners on April 1, 1910, closed practically every coal mine in the States of Missouri, Kansas, Arkansas and Oklahoma, causing serious losses in many ways—the loss of gross and net earnings on commercial coal, decrease in tons handled per freight train and consequent increase in cost per ton handled, temporary increase in cost price of our engine fuel, and, most expensive of all, the enforced additional cost of hauling Company coal from Indiana, Kentucky and Alabama to Oklahoma, Kansas and Texas. At the close of the fiscal year the mines had not resumed operation. The cost to your lines in actual net earnings for the period April 1 to June 30 was probably not less than one million dollars. This, in addition to the difficult operation in consequence of an unusually long and severe winter, together with increases in wages—necessary and unavoidable—has given your operating officials little opportunity to show efficiency in the matter of transportation costs.

By an agreement with the Houston & Texas Central Railroad Company and other Southern Pacific lines, close arrangements have been made effective for the transportation of freight and passengers via Dallas, Sherman and Fort Worth, and via Houston, Tex. This understanding largely serves our purpose as a connecting line between our properties north of the Red River and those in Southern Texas, and obviates the necessity of expensive construction through a territory already well occupied by north and south railroad lines.

The statement of Industries located on the Company's tracks during the year as reported by the Company's Industrial Department shows the usual satisfactory increase. Three hundred and twenty new industries, costing approximately \$5,727,000 and employing 8400 men, were established during the year.

The usual statements showing the Condensed Balance Sheet, Income and Profit and Loss Accounts, and Statistical Statements, each including the figures of the Chicago & Eastern Illinois Railroad Company, will be found on pages 44 to 76 of pamphlet report.

The Interstate Commerce Commission has prescribed and issued a form of General Balance Sheet Statement for steam railroads, and made same effective June 15, 1910. That form has been followed in stating the Condensed Balance Sheet, including the figures of the Chicago & Eastern Illinois Railroad Company, but the comparative balance sheet of the Company on pages 16 and 17 of pamphlet report is stated as heretofore in order to make an intelligent comparison with the preceding year.

Cheerful acknowledgment is hereby made of the faithful and efficient service rendered by officers and employees during the year.

By order of the Board of Directors,

B. L. WINCHELL, President.

October 1, 1910.

ST. LOUIS & SAN FRANCISCO RAILROAD LINES.—INCOME ACCOUNT, FISCAL YEAR ENDED JUNE 30, 1910, COMPARED WITH PREVIOUS YEAR.

	1909-10.	1908-9. With B. S. L. & W. and O. & N. W. figures omitted.	Increase. Amount.	P. ct.	Decrease. Amount.	P. ct.
Average miles operated	5,071.79	5,072.67	.....	.....	.88	.....
Operating Revenue:						
Freight	\$27,645,863 48	\$25,262,515 93	\$2,383,347 55	9.4	.....	.....
Passenger	10,548,969 83	9,603,340 26	945,629 57	9.8	.....	.....
Mail	1,009,241 56	999,935 45	9,306 11	0.9	.....	.....
Express	1,134,994 37	1,129,201 66	5,792 71	0.5	.....	.....
Miscellaneous	530,811 88	527,951 03	2,860 85	4.3	.....	.....
Total transportation revenue	\$40,889,791 12	\$37,527,944 33	\$3,366,846 79	9.0	.....	.....
Revenue from operation other than transportation	276,148 25	234,041 71	42,106 54	18.0	.....	.....
Total operating revenue	\$41,165,939 37	\$37,766,986 04	\$3,408,953 33	9.0	.....	.....
Operating Expenses:						
Maintenance of way and structures	\$5,778,268 15	\$4,987,632 77	\$790,635 38	15.9	.....	.....
Maintenance of equipment	5,940,310 37	4,596,862 39	1,343,447 98	29.2	.....	.....
Traffic expenses	1,036,821 23	873,292 10	163,529 13	18.7	.....	.....
Transportation expenses	14,688,694 38	13,103,878 18	1,584,816 20	12.2	.....	.....
General expenses	1,223,348 06	1,198,425 71	24,922 35	2.1	.....	.....
Total operating expenses	\$28,676,842 19	\$24,760,091 15	\$3,916,751 04	15.8	.....	.....
Net operating revenue	\$12,489,097 18	\$12,996,594 89	.....	.....	\$507,797 71	3.9
Taxes	1,458,185 96	1,532,148 60	.....	.....	73,962 64	4.8
Operating income	\$11,030,911 22	\$11,464,746 29	.....	.....	\$433,835 07	3.8
Miscellaneous Income:						
Hire of equipment	\$699,988 37	\$260,986 63	.....	.....	\$349,901 64	134.5
Other income	2,919,416 99	1,715,112 29	\$1,199,304 79	68.7	.....	.....
Total miscellaneous income	\$2,300,428 72	\$1,455,025 57	\$845,403 15	58.1	.....	.....
Total income	\$13,331,339 94	\$12,919,771 86	\$411,568 08	3.2	.....	.....
Interest	\$7,447,805 63	\$6,517,319 38	\$930,486 25	14.3	.....	.....
Rentals and sinking funds:						
Interest on guaranteed securities	2,594,360 91	2,591,631 12	2,729 79	0.1	.....	.....
Other rentals and sinking funds	627,302 23	661,562 88	.....	.....	\$34,260 65	5.2
Dividends on trust certificates, the Kansas City, Fort Scott & Memphis Railway	540,400 00	540,400 00	.....	.....	.....	.....
Dividends on trust certificates, Chicago & Eastern Illinois Railroad	999,482 00	1,094,482 00	.....	.....	95,000 00	8.7
Total charges	\$12,209,280 77	\$11,405,295 28	\$803,985 39	7.0	.....	.....
Available for dividends	\$1,121,959 17	\$1,514,376 48	.....	.....	\$392,417 31	25.9
Dividends:						
Four per cent. on first preferred stock	199,742 12	199,742 12	.....	.....	.....	.....
Surplus carried to credit of profit and loss	\$922,217 05	\$1,314,634 36	.....	.....	\$392,417 31	29.8

Figures in italics denote debit.

ST. LOUIS & SAN FRANCISCO RAILROAD LINES.—GENERAL PROFIT AND LOSS ACCOUNT AND ADJUSTMENTS THEREIN, JUNE 30, 1909, TO JUNE 30, 1910.

Credit.	
Balance at credit, as per annual report June 30, 1909.....	\$4,014,330 34
Adjustment account omission of B. S. L. & W. Ry. and O. & N. W. R. R.....	185,791 14
Total.....	\$4,200,121 48
Surplus for the year ended June 30, 1910.....	922,217 05
Total Credit.....	\$5,122,338 53
Debit.	
Proportion for the year of discount on securities sold.....	\$480,183 79
Depreciation prior to July 1, 1907, in the value of equipment destroyed and dismantled during current fiscal year.....	225,922 11
Sundry adjustments not affecting current year's income.....	21,616 40
Total Debit.....	\$727,722 30
Balance.....	4,394,606 23
By Balance at credit, June 30, 1910.....	\$4,394,606 23

ST. LOUIS & SAN FRANCISCO RAILROAD LINES.—CONDENSED GENERAL BALANCE SHEET, JUNE 30, 1910, AND COMPARISON WITH PREVIOUS YEAR.

Assets.	1910.	1909.	With B. S. L. & W. and O. & N. W. figures omitted.	Increase.	Decrease.
Capital Assets:					
Franchises and property.....	\$214,003,890 94	\$190,601,738 51	\$23,402,152 43		
Stocks and bonds owned.....	203,845 69	203,845 69			
Total franchises and property.....	\$214,207,736 63	\$190,805,584 20	\$23,402,152 43		
Leasehold estate (the Kansas City, Fort Scott & Memphis Railway).....	58,642,263 69	55,203,841 11	3,438,422 58		
Leasehold estate (Kansas City, Memphis & Birmingham Railroad).....	9,257,008 78	9,175,875 76	81,734 02		
Franchises and property, auxiliary companies.....	4,550,455 90	7,843,934 82	\$2,893,478 92		
Chicago & Eastern Illinois Railroad Company preferred stock (cost of).....	9,321,550 00	9,321,550 00			
Chicago & Eastern Illinois Railroad Company common stock (cost of).....	18,239,187 15	18,239,237 13	50 00		
Total.....	\$314,618,803 13	\$290,560,022 02	\$24,058,781 11		
Current Assets:					
Cash in treasury.....	\$1,568,910 29	\$1,306,870 20	\$262,040 09		
Cash in hands of fiscal agents.....	4,198,950 17	3,799,483 89	399,466 28		
Cash with trustees for redemption of called bonds (see contra).....	6,248,000 00		6,248,000 00		
Due from agents and conductors.....	634,268 59	536,841 33	97,427 26		
Due from railroad companies, account traffic.....	25,710 04	44,044 13	\$18,334 09		
Due from companies and individuals.....	2,375,852 23	1,670,966 45	704,885 78		
Bills receivable.....	672,204 71	61,234 42	610,970 29		
Due from U. S. Postoffice Department.....	84,335 34	103,208 47	18,873 13		
Securities in treasury.....	9,269,958 32	7,024,078 66	2,245,879 66		
Supplies on hand.....	3,873,785 63	3,071,459 15	802,326 48		
Advances account construction.....	934,786 65	5,144,047 82	4,209,261 17		
Total.....	\$29,986,771 97	\$22,762,274 52	\$7,224,497 45		
Deferred Accounts:					
Open carrying accounts in process of adjustment.....	\$747,074 05	\$599,250 75	\$147,823 30		
Discount on bonds, carried in suspense, to be charged out in annual installments.....	9,788,690 67	4,819,094 56	4,969,596 11		
Trustees' sinking fund accounts.....	468,776 58	448,370 64	20,405 94		
Sinking funds.....	32,483 30	78,184 07	\$45,700 77		
Total.....	\$11,037,024 00	\$5,968,900 02	\$5,068,124 58		
Total Assets.....	\$355,642,599 70	\$319,321,197 56	\$36,321,402 14		
Liabilities.	1910.	1909.	With B. S. L. & W. and O. & N. W. figures omitted.	Increase.	Decrease.
Capital stock:					
First preferred.....	\$5,000,000 00	\$5,000,000 00			
Second preferred.....	16,000,000 00	16,000,000 00			
Common.....	29,000,000 00	29,000,000 00			
Total.....	\$50,000,000 00	\$50,000,000 00			
Funded debt.....	\$165,128,204 11	142,549,332 71	\$22,578,871 40		
Equipment bonds and notes.....	14,152,521 79	13,045,551 99	1,106,969 80		
Outstanding securities on leasehold estate (the K. C. F. S. & M. Ry.):					
Stock:					
Preferred certificates.....	\$13,510,000 00	\$13,510,000 00			
Funded debt.....	\$13,668,300 00	39,891,300 00	\$26,223,000 00		
Equipment bonds and notes.....	1,548,000 00	1,988,000 00	\$440,000 00		
Total.....	\$58,726,300 00	\$55,389,300 00	\$3,337,000 00		
Outstanding securities on leasehold estate (K. C. M. & B. R. R.):					
Funded debt.....	9,246,670 00	9,247,420 00	\$750 00		
Preferred stock trust certificates (C. & E. I. R. R.).....	3,923,000 00	6,923,000 00	\$3,000,000 00		
Common stock trust certificates (C. & E. I. R. R.).....	9,317,550 00	9,317,550 00			
Total.....	\$22,487,220 00	\$25,487,970 00	\$3,000,750 00		
Current Liabilities:					
Audited vouchers and payrolls.....	\$4,586,767 04	\$4,137,127 45	\$449,639 59		
Interest and dividends matured.....	3,106,763 90	2,887,582 83	219,181 07		
Interest accrued (not due).....	1,002,679 72	1,343,701 05	341,021 33		
Taxes accrued (not due).....	521,568 98	420,380 93	101,188 05		
Notes payable.....	6,008,070 00	1,713,329 12	4,294,740 88		
Bonds called for redemption (see contra).....	6,348,000 00		6,348,000 00		
Total.....	\$22,173,849 64	\$10,502,121 38	\$11,671,728 26		
Provisional Accounts:					
Sinking funds accrued.....	\$248,977 31	\$285,078 08	\$36,090 77		
Equipment replacement fund.....	278,945 35	9,745 42	\$269,199 93		
Improvement fund (K. C. & M. Ry. & Br. Co.).....	7,475 27	7,486 59	11 32		
Total.....	\$535,397 93	\$302,310 09	\$233,087 84		
Grand total Liabilities.....	\$355,247,963 47	\$315,121,086 08	\$39,126,877 39		
Profit and loss.....	4,394,606 23	4,200,111 48	194,494 75		
Total.....	\$355,642,599 70	\$319,321,197 56	\$36,321,402 14		

NOTE.—In stating the assets and liabilities of the companies covered by this balance sheet, the holdings of the St. Louis & San Francisco Railroad Co. in the bonds and capital stocks of leased and auxiliary lines are eliminated.

†Excludes, in order to avoid duplication, \$10,000,000 N. O. T. & M. Division bonds pledged as collateral to other liabilities included in "funded debt."

‡Excludes \$492,000 Memphis, Kansas & Colorado Railway Co. First Mortgage 7 per cent. bonds maturing September 1, 1910, funds for redemption of which were held by Trustee.

*\$3,000,000 of Kansas City & Memphis Railway & Bridge Co. bonds transferred from "funded debt auxiliary companies" to "funded debt leasehold estate (the K. C. F. S. & M. Ry.)."

ST. LOUIS & SAN FRANCISCO RAILROAD LINES.—FREIGHT TRAFFIC STATISTICS, YEAR ENDED JUNE 30, 1910, COMPARED WITH PREVIOUS YEAR.

	1909-10.	1908-9.	Increase.	Decrease.
Revenue per ton mile.....	\$.0098	\$.0100		\$.0002
Revenue per ton.....	\$ 1.551	\$ 1.584		\$.033
Revenue per train mile.....	\$ 2.178	\$ 2.215		\$.037
*Revenue per car mile.....	\$.118	\$.129		\$.002
Revenue per mile of road.....	\$5,450.91	\$4,980.12	\$470.79	
Number of tons per train mile—revenue freight.....	222.91	220.81	2.10	
Number of tons per train mile—company freight.....	43.85	36.68	7.17	
Number of tons per train mile—all freight.....	266.76	257.49	9.27	
Number of tons per loaded car mile—revenue freight.....	17.14	16.93	.21	
Number of tons per loaded car mile—company freight.....	3.37	2.81	.56	
Number of tons per loaded car mile—all freight.....	20.51	19.74	.77	
Number of cars per train—loaded.....	13.01	13.05		.04
Number of cars per train—empty.....	5.38	5.35	.02	
Number of cars per train—all.....	18.39	18.41		.02
Average haul per ton—revenue freight (in miles).....	158.09	157.91	.18	
Average haul per ton—company freight (in miles).....	141.87	125.75	16.12	
Average haul per ton—all freight (in miles).....	155.66	152.35	3.30	
Density of ton miles, per mile of road—revenue freight.....	557,885	496,572	61,314	

*Excludes caboose car mileage.

NOTE.—The above figures exclude those of the B. S. L. & W. Ry. and O. & N. W. R. R.

ST. LOUIS & SAN FRANCISCO RAILROAD LINES.—PASSENGER TRAFFIC AND PER MILE OF ROAD STATISTICS, YEAR ENDED JUNE 30, 1910, COMPARED WITH PREVIOUS YEAR.

Passenger Traffic.	1909-10.	1908-9.	Increase.	Decrease.
Revenue per passenger mile.....	\$.0221	\$.0205	\$.0016	
Revenue per passenger.....	\$ 1.0120	\$.9116	\$.1004	
Revenue per train mile (excluding mail and express).....	\$.9951	\$.9676		\$.0275
Revenue per train mile (including mail and express).....	\$ 1.1974	\$ 1.2188		\$.0214
*Revenue per car mile.....	\$.3279	\$.3232	\$.0047	
Revenue per mile of road (excluding mail and express).....	\$2,679.93	\$1,893.15	\$786.78	
Revenue per mile of road (including mail and express).....	\$2,502.69	\$2,312.88	\$189.81	
Number of passengers per train mile.....	45.91	48.55		3.54
*Number of passengers per car mile.....	14.83	15.73		.90
Average distance carried (in miles).....	45.81	44.37	1.44	
Number of cars per train.....	4.53	4.60		.07
Density of passenger miles, per mile of road.....	94,067	92,138	1,929	
Per Mile of Road.	1909-10.	1908-9.	Increase.	Decrease.
Total operating revenue.....	\$8,116.65	\$7,443.21	\$673.44	
Operating expenses.....	5,654.19	4,881.67	772.52	
Net revenue.....	\$2,462.46	\$2,562.11	\$99.65	
Other income.....	453.57	286.84	166.73	
Total income.....	\$2,916.03	\$2,848.95	\$67.08	
Taxes.....	\$287.61	\$202.04	\$85.57	
Rentals.....	741.77	747.85	6.08	
Fixed charges.....	1,665.34	1,590.55	74.79	
Total charges and taxes.....	\$2,694.72	\$2,539.44	\$155.28	
Balance.....	\$221.31	\$309.51		\$77.20

*Based on cars carrying passengers.

NOTE.—The above figures exclude those of the B. S. L. & W. Ry. and O. & N. W. R. R.

ST. LOUIS & SAN FRANCISCO RAILROAD LINES.—CONDENSED INCOME ACCOUNT FOR THE TEN YEARS ENDED JUNE 30, 1910.

Years.	Average mileage operated.	Gross income.	Operating expenses and all other deductions from income.	Total net income.
1901.....	1,086.62	\$10,284,807 38	\$6,373,764 79	\$3,911,042 59
1902.....	3,252.35	21,818,942 87	14,219,004 41	7,600,000 46
1903.....	3,675.23	25,032,813 84	16,797,447 97	8,235,365 87
1904.....	4,216.88	27,779,843 91	18,853,252 04	8,926,591 87
1905.....	5,030.45	30,790,553 65	20,667,063 65	10,123,490 00
1906.....	5,968.92	33,679,316 45	22,144,195 95	11,535,120 50
1907.....	5,061.72	40,127,172 19	26,395,516 19	13,731,656 00
1908.....	5,064.16	37,354,689 11	26,577,785 36	10,776,903 75
1909.....	5,072.67	39,212,611 61	26,953,802 63	12,258,808 98
1910.....	5,071.79	43,466,398 09	30,762,530 38	12,703,867 71
Years.	Interest on funded debt and equipment notes, etc.	Surplus applicable to dividends.	Less dividends declared as per income account statements.	Balance of income carried to profit and loss.
1901.....	\$2,281,803 32	\$1,629,299 27	\$900,000 00	\$1,029,299 27
1902.....	4,816,259 86	2,682,778 60	1,210,581 06	1,472,197 54
1903.....	5,331,026 22	2,904,339 65	2,269,364 62	634,975 03
1904.....	6,157,852 97	2,768,739 89	2,344,844 12	423,895 68
1905.....	7,094,638 95	2,628,710 42	2,444,324 12	184,386 31
1906.....	7,591,192 87	2,944,917 63	2,154,624 12	789,293 51
1907.....	7,968,190 71	5,783,465 29	1,834,624 12	3,948,841 17
1908.....	8,682,555 61	2,082,948 14	1,834,624 12	2,248,324 02
1909.....	9,108,350 59	3,149,258 48	1,834,624 12	1,314,634 36
1910.....	10,042,156 54	2,661,841 17	1,739,624 12	922,217 05

NOTE.—The above figures exclude those of the B. S. L. & W. Ry. and O. & N. W. R. R.

[Continued from Page 82.]

ly different from those tabulated; therefore the company will supply blueprints for specific machines. In addition to air compressors, the Platt Iron Works Co. manufactures steam and power pumping machinery, high-duty water-works pumping engines, turbine pumps, feed-water heaters and purifiers, Victor turbine water-wheels, oil mill and transmission machinery, etc.

"Chloride Accumulator" for Railways

Installations of the "chloride accumulator" on the system of the Gulfport & Mississippi Coast Traction Co. form the subject of Bulletin No. 125, issued by the Electric Storage Battery Co., general offices and plant, Allegheny avenue and 19th street, Philadelphia. The battery equipment of the system referred to was recently completed by the installation of a third battery, the other two having been in operation for some time. Of the three batteries, the first installed was a line battery between two rotary substations; the second a power-house battery regulating fluctuations on both direct and alternating-current systems, while the one just completed is a floating battery near the end of the line. Other bulletins issued by the Electric Storage Battery Co. include No. 126, illustrating and describing oil insulators for supporting cells on the "chloride accumulator," and Bulletin No. 127, illustrating and describing automatic regulating apparatus.

Wyckoff Wood Water Pipe.

On account of an increasing demand through the West and South for Wyckoff wooden water pipe, the manufacturer of this product sought better means of supplying its customers in these sections than by shipping from Elmira, N. Y. The company investigated the qualities of various Southern woods, and found that Southern pines and gums were entirely suitable for pipe for many purposes, while Southern cypress is superior in many respects to any other material for making wood pipe. It accordingly established a modern plant at Alexandria, La., with a capacity of 4000 feet of 10-inch pipe per day, although it manufactures pipe from 2 to 48 inches in diameter and in sections from 2 to 12 feet long. Wyckoff wooden water pipe is manufactured by A. Wyckoff & Son Company, Alexandria, La., and Elmira, N. Y., and is illustrated and described in a catalogue which the company has issued.

Two Westinghouse Circulars.

The Westinghouse Electric & Manufacturing Co., Pittsburg, has issued Circular 1098 on switchboard indicating meters. The publication outlines cardinal points to be kept in mind in the selection of meters and describes direct current and alternating current indicating meters, including frequency meters, power factor meters, synchoscopes and instrument transformers. It is pointed out that with the development of switchboard design has come the necessity for various types and forms of indicating meters, each adapted to its own peculiar purpose. Meters amply accurate for one class of service might prove entirely unsuited for another service, while high-grade meters are in general too expensive for use where accuracy is not of prime importance. The company has also issued a revision of its Circular 1118 on type CCL poly-phase induction motors. The circular describes electrical and mechanical features of these motors and presents interesting illustrations of their applications. It also includes short descriptions of the various starting devices used with squirrel cage induction motors.

Crocker-Wheeler Literature.

Literature recently issued by the Crocker-Wheeler Company, Ampere, N. J., includes Bulletins 120, 122 and 123, illustrating and describing various electrical machinery which this company manufactures. Bulletin No. 120 is devoted to Form I direct-current motors, which may be used for belt, gear or direct drive, and are applicable to machine tools, elevators, pumps, printing presses, laundry machinery, hoists, or any machinery requiring constant or variable speed. Bulletin No. 122 is devoted to Form D generators, which are constructed on the same general lines as Crocker-Wheeler engine-type generators, though designed for higher speed and less expensive. They are used for belt, gear or direct drive, and are intended for plants having spare-engine capacity and where quick installation and low cost are desirable. Bulletin No. 123 is devoted to adjustable speed motors, their advantages being most conspicuous wherever the speed of the driven machinery must be frequently altered to provide for varying grades of work. They have been extensively introduced into laundries, printing shops and other industries.

BIG COAL AND COKE PLANS.

Consolidation Company and Railroads Reported Interested in a Great Enterprise.

The Consolidation Coal Co., whose headquarters are in Baltimore, is preparing, according to reports in financial circles, to enter upon the production of high-grade coking coal on an extensive scale in the Elkhorn region of Kentucky, and the development may result in the establishment there of an enormous coke-making center. The company has, so it is reported, purchased in the Elkhorn fields 100,000 acres of land, and it also owns in Martin county at another point 30,000 acres. Arrangements to finance the development are reported under way in New York, where President C. W. Watson and Vice-President J. H. Wheelwright have spent most of the time for some weeks. Reports from there indicate that the financial agreement has been closed, involving from \$10,000,000 to \$15,000,000 of new securities. This plan is subject to ratification by stockholders.

The extension of the Lexington & Eastern Railroad, recently authorized by the Louisville & Nashville, is said to be connected with this development. It will run from Jackson, Ky., southeast along the north fork of the Kentucky River, 100 miles to a point beyond Whitesburg, Ky. The Chesapeake & Ohio Railway, it is further reported, will also authorize an extension from a point near Pikeville, Ky., into the same region, and the lines will handle principally the output of coal and coke to be developed by the Consolidation Coal Co. Furthermore, it is expected that the Cincinnati, Hamilton & Dayton Railway, as recently reported, will build an extension of about 150 miles from the Ohio River down into the same coal fields as a result of this proposed enterprise.

Owing to the progress of negotiations, the interested parties have declined to talk, but it appears assured that the deal will go through so far as the Consolidated Coal Co. is concerned. The railroads continue silent as to what they will do beyond what is already announced.

Western Electric Expansion.

The executive committee of the Western Electric Co., 463 West street, New York, has voted to expend \$1,000,000 in enlargements at the Hawthorne plant, near Chicago. Enlargements will be in the nature of telephone and cable shops, and will give 300,000 feet of additional floor space, increasing Hawthorne capacity 20 per cent.

When, in 1905, it became evident that the end of possible expansion at the Polk and Clinton street properties in Chicago had been attained, far-reaching plans were evolved which cover requirements beyond the age of the present generation. They included the transfer of all the manufacturing to Hawthorne, including the New York end, and step by step this has been accomplished as fast as conditions warranted. New York city will probably always remain the executive and administrative headquarters, but Hawthorne is to be ultimately its manufacturing center. It is of interest to recall that the company originally came to New York to manufacture supplies for the Western Union, but that branch of the business is now far overshadowed by the marvelous development of the telephone.

At Hawthorne the company owns 150 acres of virgin prairie, of which about 25 acres are now occupied by the shops. Already the Hawthorne plant is claimed to be the largest center for the manufacture of telephone apparatus in the world, and the concentration movement is by no means completed.

The Western Electric Co. has expended about \$20,000,000 on its plants now in operation.

FINANCIAL NEWS

The MANUFACTURERS' RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Review of the Baltimore Market.

Office MANUFACTURERS RECORD,

Baltimore, Md., November 2.

The Baltimore stock market during the past week displayed a moderate amount of activity as compared with the last few weeks, with a development of interest in Houston Oil stock. In the trading the common advanced from 7½ to 9, with last sale at 8½, and the preferred rose from 41 to 47½, with last sale at 45½.

The dealings also showed other sales as follows: United Railways incomes, 62½ to 63½; do. funding 5s, 85; United 4s, 85½ to 84½, with last sale at 84½; United Light & Power 4½s, 91½ to 92; Consolidated Gas, Electric Light & Power 4½s, 83 to 83½; do. notes, 98½; Consolidated Gas 5s, 107½; do. 4½s, 92 to 93; Seaboard 4s, stamped, 86½ to 86; do. three-year 5s, 99½; do. 10-year 5s, 99½; Consolidated Cotton Duck, 4½ to 5½, with last sale at 5½; do. preferred, 19½ to 19¾; Mt. Vernon-Woodberry Cotton Duck 5s, 73¾ to 74¾, reacting to 73¾; G. B. S. Brewing 1sts, 42½ to 43.

Bank stocks sold as follows: Bank of Baltimore, 132 to 135, reacting to 132; Citizens', 39¾; Union, 125. Baltimore Trust was traded in at 164½ to 165; Fidelity & Deposit, 149½ to 150; United States Fidelity, 143 to 144½; American Bonding, 78¾; Mercantile Trust, 144 to 144½; Maryland Casualty, 95½; Maryland Trust preferred, 101½; Union Trust, 70½; Maryland Trust common, 70 to 74.

Other securities sold thus: Atlantic Coast Line Consolidated 4s, 95¾ to 95½; Augusta Railway & Electric 5s, 100 to 100½; Canton Company (Baltimore), 120; Knoxville Traction 5s, 103; Norfolk & Portsmouth Traction 5s, 83½ to 82¾; Norfolk Railway & Light 5s, 97¾; Northern Central Railway stock, 125 to 126½, with last sale at 125½; Carolina Central 4s, 92; Baltimore City 4s, 1954, 100¼ to 3½s, 1930, 93½; do. 5s, 1916, W. L. 104; Consolidation Coal, 109 to 114, with last sale at 111; Baltimore Brick preferred, 30; Somerset Coal 1st 5s, 95½ to 103; City & Suburban (Baltimore) 5s, 105½; Virginia Midland 2d, 100¾ to 100¼; Washington & Vandemere 3½s, 93¼; Atlantic Coast Line convertible debenture 4s, 97¾; Consolidation Coal of Kentucky 5s, 100 to 100½; Fairmont Coal 1st 5s, 95½ to 96; Maryland Electric 5s, 97¾ to 97½; Minneapolis Street Railway and St. Paul Railway joint 5s, 105½; Atlantic Coast Line (Louisville & Nashville collateral trust) 4s, 92¾; Norfolk City 5s, 1923, 102; Baltimore Brick common, 3; Baltimore Brick 5s, 80; Anacostia & Potomac 5s, 100½; Fairmont & Clarksburg Traction 5s, 97.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended November 2, 1910.

Railroad Stocks.	Par.	Bid.	Asked.
Atlantic Coast Line.....	100	117	...
Atlantic Coast of Conn.....	100	233	238
Charleston Consolidated.....	50	21	...
Georgia Sou. & Fla. 1st Pfd.....	100	92	...
Maryland & Pennsylvania.....	100	22¼	25
Norfolk Railway & Light.....	25	...	23½
Seaboard Company Common.....	100	...	20½
Seaboard Company 1st Pfd.....	100	72	75
Seaboard Company 2d Pfd.....	100	41	43
United Rys. & Elec. Co.....	50	14½	14¾
Bank Stocks.			
Bank of Baltimore.....	100	...	131
Citizens'.....	10	39¼	40
Mechanics'.....	10	27	28¼
Second National.....	100	155	...
Third National.....	100	132	145
Union.....	100	124½	...
Western.....	20	...	35
Trust, Fidelity and Casualty Stocks.			
American Bonding.....	25	78½	78¾
Baltimore Trust.....	100	164	165½
Colonial Trust.....	50	28	30
Fidelity & Deposit.....	50	146	150
Fidelity Trust.....	100	207	...
Maryland Trust.....	100	72	74
Maryland Trust Pfd.....	100	102	108
Maryland Casualty.....	25	95¾	96
Mercantile Trust & Deposit.....	50	144	145
U. S. Fidelity & Guaranty.....	100	144	145½
Miscellaneous Stocks.			
Con. Cotton Duck Common.....	50	5	6
Con. Cotton Duck Pfd.....	50	19	20
Con. Gas, Elec. Lt. & P. Co.....	100	62	...
Con. Gas, Elec. Lt. & P. Pfd.....	100	92	...
Consolidation Coal.....	100	111½	112
G. B. S. Brewing Co.....	100	...	2
George's Creek Coal.....	100	3½	8
Mer. & Miners' Trans. Co.....	100	80	85
Railroad Bonds.			
Atlanta & Birmingham 4s.....	...	84½	...
Atlantic Coast 1st 4s.....	...	95½	96

Atlantic Coast Conv. Deben. 4s.....	97	98
At. Coast (Conn.) 4s, Cts., 5-20s.....	91	...
Atlantic Coast (Conn.) 5s, Cts.....	104	...
Baltimore & Harrisburg 5s.....	105½	...
Baltimore & Harrisburg Ext. 5s.....	105	...
Carolina Central 4s.....	91¾	92½
Charleston & West. Car. 5s.....	105¼	106
Coal & Coke Railway 5s.....	90	...
Coal & Iron Railway 5s.....	100½	...
Col. & Green. 1st 5s.....	105	107
Georgia & Alabama 5s.....	104	104½
Georgia, Car. & North. 1st 5s.....	104	105½
Georgia Southern & Florida 1st 5s.....	106	106½
Macon, Dublin & Savannah 5s.....	93	...
Petersburg Class A 5s.....	107	110
Piedmont & Cumberland 1st 5s.....	99	...
Potomac Valley 1st 5s.....	103	...
Richmond & Danville 5s.....	104½	105½
Seaboard Air Line 4s.....	86	87
Seaboard 4s, Stamped.....	85¾	86
Seaboard 10-year 5s.....	59½	100
Seaboard 3-year 5s.....	59½	100
Seaboard & Roanoke 5s.....	105¼	106
Seaboard & Roanoke 6s.....	100	...
Virginia Midland 2d 6s.....	100¼	100½
Washington Terminal 3½s.....	89	...
Washington & Vandemere 4½s.....	93	...
Western Maryland 4s.....	86½	86¾
Western N. C. Con. 6s.....	104½	105½

Street Railway Bonds.

Anacostia & Potomac 5s.....	100	100¾
Atlanta Con. St. Ry. 5s.....	104½	105
Augusta Ry. & Elec. 5s.....	100¼	101
Balto. City Pass. 5s.....	99¾	100¼
Balto. Sp. Pt. & C. 4½s.....	91¾	93
Balto. Trac. 1st 5s.....	106¼	106½
Charleston Con. Elec. 5s.....	94	95
City & Suburban 5s (Balto.).....	105½	105¾
City & Suburban 5s (Wash.).....	101	...
Fairmont & Clarksburg Trac. 5s.....	97	...
Knoxville Trac. 5s.....	102	...
Lake Roland Elevated 5s.....	96¼	96½
Macon Railway & Light 5s.....	95¼	96½
Maryland Electric Railways 5s.....	97	97½
Memphis St. Ry. 5s.....	97	98¼
Norfolk & Portsmouth Trac. 5s.....	81½	82¾
Norfolk Ry. & Light 5s.....	97¾	98
United Railways 1st 4s.....	84½	84¾
United Railways Inc. 4s.....	62¾	63
United Railways Funding 5s.....	84½	85

Miscellaneous Bonds.

Ala. Con. Coal & Iron 5s.....	73	...
Baltimore Brick 5s.....	80	...
Baltimore Elec. 5s, Stp.....	88	...
Consolidated Gas 5s.....	100½	101½
Consolidated Gas (Ky.) 5s.....	92¾	93½
Consolidation Coal (Ky.) 5s.....	100¼	101½
Consolidation Coal Refdg. 4½s.....	92¾	93½
Con. Gas, Elec. Lt. & P. 4½s.....	83	83½
Fairmont Coal 1st 5s.....	95½	96
G. B. S. Brewing 1st 4s.....	43	...
G. B. S. Brewing Income 5s.....	5	7
Mt. Vernon-Woodbury Coal. Duck 5s.....	73¾	74
United Elec. Lt. & P. 4½s.....	91½	92

SOUTHERN COTTON-MILL STOCKS.

Quotations Furnished by William S. Glenn, Broker, Spartanburg, S. C., for Week Ending October 31.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.).....	72½	...
Aiken Mfg. Co. (S. C.).....	90	...
American Spinning Co. (S. C.).....	160	...
Anderson Cotton Mills (S. C.).....	50	...
Arcadia Mills (S. C.).....	100	...
Arkwright Cotton Mills (S. C.).....	103	...
Augusta Factory (Ga.).....	60	65
Avondale Mills (Ala.).....	116	...
Belton Mills (S. C.).....	140	...
Brandon Mills (S. C.).....	99	102
Brogton Mills (S. C.).....	90	...
Cannon Mills Co. (N. C.).....	135	...
Catawba Cotton Mills (N. C.).....	130	135
Chadwick Mfg. Co. (S. C.) Pfd.....	100	100
Chiquola Mfg. Co. (S. C.).....	120	120
Clifton Mfg. Co. (S. C.).....	105	...
Clinton Cotton Mills (S. C.).....	120	130
Columbus Mfg. Co. (Ga.).....	93	98
Courtney Mfg. Co. (S. C.).....	99	100
Dallas Mfg. Co. (Ala.).....	99	...
Darlington Mfg. Co. (S. C.).....	78	82
D. E. Converse Co. (S. C.).....	100	...
Dayton Mills (S. C.).....	95	105
Eagle & Phenix Mills (Ga.).....	175	185
Easley Cotton Mills (S. C.).....	175	185
Enoree Mfg. Co. (S. C.).....	57	60
Enoree Mfg. Co. (S. C.) Pfd.....	95	100
Enterprise Mfg. Co. (Ga.).....	80	85
Exposition Cotton Mills (Ga.).....	200	...
Gaffney Mfg. Co. (S. C.).....	76	...
Gainesville Cotton Mills (Ga.).....	75	80
Glenwood Cotton Mills (S. C.).....	150	...
Gluck Mills (S. C.).....	100	102
Granby Cotton Mills (S. C.) 1st Pfd.....	35	40
Granville Mfg. Co. (S. C.).....	155	165
Greenwood Cotton Mills (S. C.).....	57	60
Grendel Mills (S. C.).....	105	110
Hartsville Cotton Mill (S. C.).....	175	...
Henrietta Mills (N. C.).....	160	175
Inman Mills (S. C.).....	104	108
King Mfg. Co., J. P. (Ga.).....	90	93
Lancaster Cotton Mills (S. C.).....	130	...
Lancaster Cot. Mills (S. C.) Pfd.....	97	100
Langley Mfg. Co. (S. C.).....	120	127
Laurens Mills (S. C.).....	127	135
Limestone Mills (S. C.).....	155	160
Lockhart Mills (S. C.).....	76	...
Lockhart Mills (S. C.) Pfd.....	99	100
Loray Cotton Mills (N. C.) Pfd.....	95	97½
Marlboro Cotton Mills (S. C.).....	75	80
Mills Mfg. Co. (S. C.).....	102	...
Molloy Mfg. Co. (S. C.).....	105	110
Monaghan Mills (S. C.).....	104	109
Monarch Cotton Mills (S. C.).....	194	...
Murray Cotton Mills (S. C.).....	125	130
Ninety-Six Cotton Mills (S. C.).....	140	150
Norris Cotton Mills (S. C.).....	121	125
Olympia Cotton Mills (S. C.).....	90	...
Orr Cotton Mills (S. C.).....	105	...
Pacolet Mfg. Co. (S. C.).....	101	...
Pacolet Mfg. Co. (S. C.) Pfd.....	90	102
Pelzer Mfg. Co. (S. C.).....	169	...
Piedmont Mfg. Co. (S. C.).....	175	177
Foe Mfg. Co., F. W. (S. C.).....	170	180
Saxon Mills (S. C.).....	130	...
Sibley Mfg. Co. (Ga.).....	71	76
Spartan Mills (S. C.).....	135	140
Trion Mfg. Co. (Ga.).....	130	...
Tucapau Mills (S. C.).....	300	...
Union-Buffalo (S. C.) 1st Pfd.....	74	80
Union-Buffalo (S. C.) 2d Pfd.....	25	...
Victor Mfg. Co. (S. C.).....	115	125
Warren Mfg. Co. (S. C.).....	107	...
Warren Mfg. Co. (S. C.) Pfd.....	106	110
Washington Mills (Va.).....	28	...

[For Additional Financial News, See Pages 90 and 91.]

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 OF BALTIMORE, MD.

Hopkins Place, German and Liberty Sts.
 Capital, \$1,000,000

July 15, 1908, Surplus and Profits, \$671,631.60

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 Accounts of Mercantile Firms, Corporations, Banks, Bankers and Individuals Invited.

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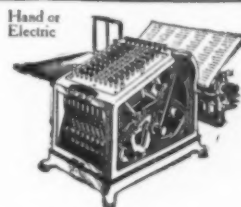
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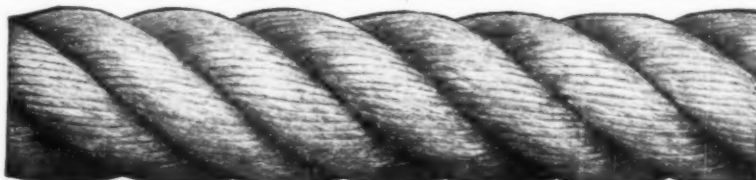
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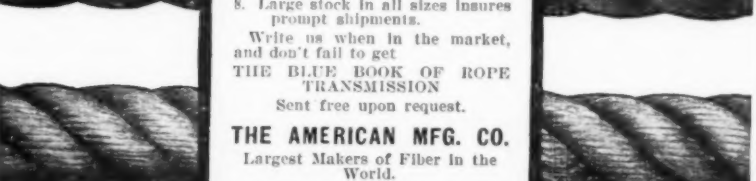
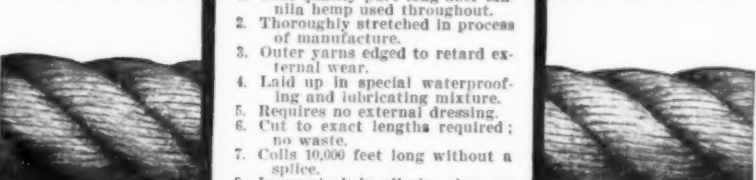
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Washington Mills (Va.) Pfd.....	106	110
Whitney Mfg. Co. (S. C.).....	120	120
Wicassett Mills (N. C.).....	135	135
Woodruff Cotton Mills (S. C.).....	118	122
Woodside Cotton Mills (S. C.).....	102	105
Watts Mills (S. C.).....	95	100
Williamston Mills (S. C.).....	120	125

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C., for Week Ending October 31.

	Bid.	Asked
Abbeville Cotton Mills (S. C.).....	70	75
Aiken Mfg. Co. (S. C.).....	90	90
American Spinning Co. (S. C.).....	160	165
Anderson Cotton Mills (S. C.).....	50	50
Anderson Cot. Mills (S. C.) Pfd.....	50	50
Arkwright Mills (S. C.).....	100	102
Augusta Factory (Ga.).....	60	65
Avondale Mills (Ala.).....	116	125
Belton Mills (S. C.).....	130	140
Bibb Mfg. Co. (Ga.).....	114	114
Brandon Mills (S. C.).....	99	104
Cabarrus Cotton Mills (N. C.).....	125	141
Chadwick-Hoskins Mfg. Co. (N. C.).....	100	100
Chadwick-Hoskins Mfg. Co. (N. C.) Pfd.....	100	102
Chiquola Mfg. Co. (S. C.).....	170	180
Clifton Mfg. Co. (S. C.).....	105	105
Clifton Mfg. Co. (S. C.) Pfd.....	100	100
Clinton Cotton Mills (S. C.).....	120	130
Columbus Cotton Mills (Ga.).....	93	98
Courtenay Mfg. Co. (S. C.).....	90	100
Dallas Mfg. Co. (Ala.).....	110	110
Darlington Mfg. Co. (S. C.).....	80	85
Drayton Mfg. Co. (Ala.).....	100	100
Eagle & Phenix Mills (Ga.).....	117	125
Easley Cotton Mills (S. C.).....	170	170
Enoree Mfg. Co. (S. C.).....	65	65
Enoree Mfg. Co. (S. C.) Pfd.....	95	100
Enterprise Mfg. Co. (Ga.).....	80	85
Exposition Cotton Mills (Ga.).....	195	200
Gaffney Mfg. Co. (S. C.).....	71	74
Galesville Cotton Mills (Ga.).....	70	70
Granby Cot. Mills (S. C.) 1st Pfd.....	35	35
Graniteville Mfg. Co. (S. C.).....	160	163
Greenwood Cotton Mills (S. C.).....	58	61
Grendel Mills (S. C.).....	105	110
Henrietta Mills (N. C.).....	160	175
King Mfg. Co. (S. C.).....	90	90
Lancaster Cotton Mills (S. C.).....	120	120
Lancaster Cot. Mills (S. C.) Pfd.....	97	100
Langley Mfg. Co. (S. C.).....	117	125
Laurens Cotton Mills (S. C.).....	130	130
Limestone Mills (S. C.).....	150	170
Lockhart Mills (S. C.).....	80	80
Lockhart Mills (S. C.) Pfd.....	99	100
Loray Mills (N. C.) Pfd.....	95	98
Marion Cotton Mills (S. C.).....	125	125
Mayo Mills (N. C.).....	100	102
Mills Mfg. Co. (S. C.).....	100	102
Mills Mfg. Co. (S. C.) Pfd.....	100	109
Monaghan Mills (S. C.).....	105	110
Monarch Cotton Mills (S. C.).....	102	107
Newberry Cotton Mills (S. C.).....	125	140
Norris Cotton Mills (S. C.).....	125	130
Olympia Cot. Mills (S. C.) 1st Pfd.....	30	30
Orangeburg Mfg. Co. (S. C.) 1st Pfd.....	80	81
Ort Cotton Mills (S. C.).....	100	105
Pineola Mfg. Co. (S. C.) Pfd.....	98	102
Pineola Mfg. Co. (S. C.) Pfd.....	98	100
Pelzer Mfg. Co. (S. C.).....	150	160
Piedmont Mfg. Co. (S. C.).....	175	177
Poe Mfg. Co. (S. C.).....	170	180
Richland Cot. Mills (S. C.) 1st Pfd.....	45	45
Raleigh Cotton Mills (N. C.).....	100	105
Reno Mills (Va.).....	153	160
Saxon Mills (S. C.).....	127	130
Sibley Mfg. Co. (Ga.).....	71	73
Spartan Mills (S. C.).....	130	140
Springstein Mills (S. C.).....	100	100
Tuckahoe Mills (S. C.).....	250	250
Trion Mfg. Co. (Ga.).....	127 1/2	127 1/2
Union-Buffalo Mills (S. C.) 1st Pfd.....	70	75
Victor Mfg. Co. (S. C.).....	110	130
Warren Mfg. Co. (S. C.).....	107	107
Warren Mfg. Co. (S. C.) Pfd.....	106	110
Washington Mills (Va.).....	28	28
Washington Mills (Va.) Pfd.....	106	110
Whitney Mfg. Co. (S. C.).....	120	125
Williamston Mills (S. C.).....	120	125
Woodruff Cotton Mills (S. C.).....	118	122
Woodside Cotton Mills (S. C.).....	102	105
Woodside Cot. Mills (S. C.) Pfd.....	94	100

FINANCIAL CORPORATIONS.

Ala., Birmingham.—Louis V. Clark is reported organizing a new bank.

Ala., Ragland.—A new bank capitalized at \$25,000 is reported organized with officers thus: W. T. Brown, president; W. B. Shaffer, vice-president, and Mr. Record, cashier.

Ark., Peach Orchard.—The People's Bank of Peach Orchard is reported chartered with \$25,000 capital. Directors: John C. Baker, president; Abe Brown, S. P. Lindsey, W. J. Brown, T. W. Ratcliffe, W. F. Pirtle and Albert Boening.

Fla., Bronson.—Official: The Bank of Levy County incorporated and application has been made for charter. Business is expected to begin about December 10 with \$20,000 capital. W. J. Epperson, Bronson, president; Dr. J. W. Turner, Otter Creek, vice-president; Mr. McMullen of Wildwood, Fla., cashier; A. P. Hardee, E. A. Pinnell and W. J. Epperson of Bronson; Dr. J. W. Turner of Otter Creek; H. T. Farr and J. K. Tatum of Tampa, Fla., directors.

Fla., Jacksonville.—The Jacksonville Real Estate & Investment Co., capital \$25,000, is reported organized by W. L. Phillips and others.

Fla., Webster.—Official: The Sumter County State Bank chartered; capital \$15,000. Business began October 22 with J. C. Getzen president, J. W. Fussell vice-president and J. J. Henderson cashier.

Ga., Atlanta.—The Bank of Commerce of Atlanta, capital \$1,000,000 and surplus \$200,000, has been granted a charter; organizers, L. C. Hopkins, John H. Carter, W. T. Gentry, I. Schoen, A. T. Shaw and others. It is said

that Mr. Carter will be president and Frederick J. Paxson and W. T. Gentry vice-presidents.

Ga., Cedartown.—A new fire insurance company capitalized at \$500,000 is reported being organized, business to begin about January 1. W. J. Harris, president of the Georgia Fire Insurance Co., and others are interested.

Ga., Duluth.—Official: The Bank of Duluth chartered; capital \$25,000; incorporators, D. W. Wilson, L. P. Panillo and others.

Ga., Roswell.—Official: The Citizens' Bank of Roswell chartered and incorporated; capital \$35,000; officers not yet elected. Business is to begin about December 1. A press report says the incorporators are C. J. Perry, J. W. Wing, G. T. Lyon, R. G. Broadwell and L. O. Teasley.

Ga., Vidalia.—The First National Bank of Vidalia is reported to have begun business; capital \$35,000. W. O. Donovan is president, James McNatt and J. W. Johnson vice-presidents, and George S. Rountree cashier.

Ky., Louisville.—The Insurance Underwriters' Co., capital \$60,000, is reported to have filed articles of incorporation; incorporators, James P. Edwards, Graham Vreeland and John W. Holland of Shelbyville.

Ky., Wilmore.—The First National Bank of Wilmore has been granted a charter; capital \$25,000; H. L. McLean, president; Jas. R. Dorman, vice-president, and C. D. Powell, cashier.

Md., Baltimore.—An official letter confirms the incorporation of the New Era Permanent Building Association. James G. McCallister, 221 West Baltimore St., and others are interested.

Md., Baltimore.—The Parkwood Building and Loan Association is reported incorporated by John T. J. Gallagher, George W. Gipe and Edward J. Hecker; directors, Cornelius Ahern, Jr., Joseph E. McAvoy, Jr., Vincent L. O'Connor, Sebastian J. Linz, John Murray, Marion G. Dinsmore, John J. McGinity and Louis P. Vieschen. Headquarters of the company will be on Eastern Ave., near Elwood Ave.

Md., Grantsville.—The First State Bank of Grantsville expects to begin business November 7 with officers thus: President, Dr. G. C. Keller; vice-president, J. J. Bender; cashier, J. D. Getty; directors, J. S. Miller, S. S. Miller, Ralph Engle, C. H. Bills, J. A. Beachey, C. H. Younkin, Gilced Broadwater and Peter Nathan.

Mo., College Mound.—The College Mound Security Bank, capital \$10,000, is reported organized with directors thus: President, W. C. Sweetman; vice-president, W. T. Batchelor; cashier, W. P. Campbell; A. F. Gibson and Frank L. McCormack. Business is expected to begin early in November.

N. C., Tarboro.—The Real Estate & Loan Co., capital \$100,000, is reported chartered by N. J. Mayor and others.

Okla., Eufaula.—The First National Bank of Eufaula, capital \$15,000, is reported incorporated by W. A. Tollemann, R. L. Simpson, J. H. Turley, T. J. Pyle and L. Brown.

Okla., Oklahoma City.—The Sackett Abstract Co., capital \$25,000, is reported incorporated by James G. Sackett, George W. Carico and George J. Encock.

Okla., Sentinel.—Official: The Oklahoma State Bank chartered; capital \$15,000; C. H. Griffith, president; E. F. Dunlap, vice-president, and J. R. De Busk, cashier.

S. C., Blacksburg.—The People's Bank, capital \$10,000, has been granted a commission; petitioners, W. E. Anderson, Chas. Barton and J. F. Belue.

S. C., Easley.—The Easley Building and Loan Association is reported chartered; capital \$50,000; W. C. Smith is president, J. M. Gurth vice-president and H. C. Hagood secretary.

S. C., Mullins.—Official: The First National Bank chartered; capital \$25,000 paid in. Business began October 22 with directors thus: B. G. Smith, Mullins, S. C., president; M. C. Woods, Marion, S. C., vice-president; F. Chalmers, Mullins, cashier; J. F. Rogers, Fairbluff, N. C.; A. B. Gordon, L. S. Acree, W. F. Norton and A. M. Brailford of Mullins, and Geo. J. Holliday, Gallivants Ferry, S. C.

S. C., North.—Official: The People's Bank of North, capital \$10,000, is reported chartered. Directors: E. C. Johnson, president; L. K. Etheredge, W. C. Culler, F. L. Witt, J. D. McCormick, W. P. Knotts, J. F. Etheredge and O. B. Riley. C. G. Schoenberg will be cashier. Business is expected to begin November 5.

S. C., Silverstreet.—A new bank capitalized at \$15,000 is reported being organized by Joseph E. Norwood of Newberry, S. C.

Tenn., Memphis.—The Discount Bank &

Trust Co., capital \$10,000, is reported to have made application for a charter; incorporators, R. T. Ronaldson, R. L. Carr, W. H. Wood, E. R. Barrow, Dr. Richmond McKinney and J. H. Hines. Business is expected to begin about November 15.

Tenn., Nashville.—The Hermitage Security Co. of Davidson county, capital \$10,000, is reported incorporated by A. P. Foster, J. E. Pollock, H. B. Clements, T. Watson Batts, C. W. De Samburg and Bert P. Woodard.

Tex., Blessing.—Prof. J. L. Hartwell and others are reported to be organizing a new bank with \$10,000 capital.

Tex., Gustine.—The First National Bank, capital \$25,000, is reported being organized by T. M. Laster, I. Sadler, J. E. and J. C. McQuatters, N. Wise, L. B. Gregg and W. B. Conaway.

Tex., Livingston.—Official: The Guaranty State Bank chartered; capital \$25,000; H. D. Reynolds, Buck, Tex., president; L. F. Gerloch, vice-president, and J. L. Muller, cashier, both of Livingston. Business began October 7.

Tex., Lytle.—Official: The Lytle State Bank chartered; capital \$12,000; incorporators, W. P. Riley, president; J. A. Wells, vice-president; A. J. Gidley, cashier; R. B. Touchstone and I. N. Johnson. Business began October 15.

Tex., Maypearl.—Official: The Farmers and Merchants' State Bank chartered; capital \$20,000; directors, S. A. Godfrey, president; C. R. Tiley, vice-president; W. A. Claunch, cashier; L. S. Cavaness, B. H. Brindley, J. P. Claunch and C. G. Brindley. Business is to begin about November 15.

Tex., Rotan.—The Western Loan & Guaranty Co. of Rotan, capital \$100,000, is reported incorporated by Arlon B. Davis, W. R. Bogart, John W. Woods and others.

Tex., San Marcos.—Ed. J. L. Green writes: "Have not organized bank. Some talk of it being done."

Tex., Temple.—The Farmers' State Bank of Temple, capital \$50,000, is reported chartered by A. W. Lingo, Frank Mott, B. Booth and others.

Va., Gladwin.—Press dispatches state that a new bank capitalized at \$50,000 is being organized.

Va., Richmond.—The German Mutual Building and Loan Association incorporated; capital \$500 to \$500,000; W. J. Gilman, president; Charles E. Lohr, vice-president; E. W. Bowles, Jr., secretary and treasurer.

Va., Richmond.—The German Mutual Building and Loan Association is reported organized with from \$500 to \$500,000 capital. Officers: W. J. Gilman, president; Chas. E. Lohr, vice-president; E. W. Bowles, Jr., secretary and treasurer.

Va., Roanoke.—The English Investment Corporation reported organized with from \$200 to \$25,000 capital; J. H. Bear, president; J. A. Bear, vice-president, and R. R. Fairfax, secretary and treasurer.

Va., Roanoke.—The Weaver Investment Co., 208 Strickland Bldg., incorporated; capital \$1000 to \$15,000; Dr. J. T. Strickland, president; Jannette S. Weaver, vice-president; P. B. Weaver, secretary and treasurer. Business is to begin about November 1.

W. Va., Franklin.—The Franklin Bank, capital \$40,000, is reported chartered by Dr. S. B. Johnson, Dr. R. L. Thacker, Byron Boggs, I. N. Ruddle and Wilbur Dolly.

NEW SECURITIES.

Ala., Camp Hill.—Reported voted: Bonds for electric lights.

Ala., Cullman.—An election is soon to be held. It is reported, to vote on improvement bonds.

Ala., Gadsden.—Official: J. L. Meeks is offering for sale \$50,000 of 6 per cent. bonds to develop property within half mile of city limits. This erroneously appeared under date of Gadsden, Ark.

Fla., Ocala.—Press dispatches state that the question of issuing bonds for public improvements is under consideration.

Fla., Key West.—Press dispatches state that \$60,000 of bonds for purchase of park have been voted.

Fla., West Palm Beach.—Press dispatches state that an election is to be held November 6 to vote on \$20,000 of 5 per cent. 30-year sewer, street, dock and park-improvement bonds.

Ga., Americus.—The election to vote on \$30,000 of sewer, \$20,000 of water extension and \$15,000 of electric light 4 1/2 per cent. 30-year bonds will, it is reported, be held November 8.

Ga., Douglasville.—November 28, It is re-

ported, an election is to be held to vote on \$20,000 of 5 per cent. 30-year electric-light-plant bonds.

Ga., Marietta.—Official: December 1 election is to be held to vote on \$13,000 of 5 per cent. sewer-extension bonds; denomination \$1000. E. H. Clay is Mayor.

Ga., Rockmart.—E. M. Edwards, City Clerk, is receiving bids until 7.30 P. M. November 1 for \$35,000 of 5 per cent. water and sewer bonds.

Ky., Brandenburg.—Official: Bids will be opened November 25 for \$1500 of 6 per cent. graded school district bonds; dated October 20, 1910; maturity \$100 October 20, 1915; \$100 each year thereafter; denomination \$100. Address D. S. Richardson, president.

Ky., Guthrie.—Reported that Chas. S. Kilder & Co. of Chicago have purchased \$9000 of 5 per cent. 20-year building and improvement bonds.

Ky., Louisville.—November 8 an election is to be held in Jefferson county to vote on \$50,000 of bonds for a modern system of rural schools.

Ky., Shelbyville.—Reported that an election is to be held in Shelby county November 8 to vote on \$75,000 of courthouse bonds.

La., Lake Charles.—Official: Bids will be opened November 1 for \$75,000 of city hall and \$25,000 of fire station 5 per cent. 36-year bonds; denomination \$2000. Address C. B. Richard, Mayor.

La., Patterson.—The Interstate Bank & Trust Co. of New Orleans is reported to have purchased \$30,000 of water-plant bonds.

La., Pineville.—Official: November 15 an election is to be held to vote on \$9000 of 5 per cent. street improvement bonds; dated 1911; maturity 1950. Address J. E. Walker, Mayor.

Miss., Ellisville.—An official letter confirms the report that \$10,000 of bonds for agricultural high school will be issued. Address J. T. Taylor, Mayor.

Miss., Meridian.—Notice is given that at 2 P. M. November 7 the Board of Supervisors of Lauderdale county will sell at public auction \$50,000 of 6 per cent. District No. 1 road bonds. W. R. Postole is clerk.

Mo., Granby.—Reported voted: \$18,000 of water-works bonds.

Mo., Mexico.—The election to vote on \$35,000 of jail and \$15,000 of infirmary bonds of Audrain county is to be held November 8.

Okla., Ada.—Reported that an election is to be held to vote on \$100,000 of water-works bonds.

Okla., Heavener.—November 15, It is reported, an election is to be held to vote on \$50,000 of water-works bonds.

Okla., Medford.—The \$40,000 of school-building bonds recently voted are 20-year 6 per cent.

Okla., Oklahoma City.—Reported that a special election is to be held to vote on \$250,000 of water-works bonds.

Okla., Okmulgee.—Official: November 3 election will be held to vote on \$60,000 of water system improvement and \$25,000 of creek improvement bonds.

S. C., Orangeburg.—Official: Voted: \$20,000 of bond for Orangeburg Railroad; date of opening bids not yet decided; L. H. Wannamaker, City Clerk.

S. C., Sumter.—The question of voting on \$25,000 of Main street improvement bonds is reported under consideration.

Tex., Austin.—The Attorney-General has approved the following securities: \$1000 of 5 per cent. 5-20-year Brown county school district No. 8 bonds; \$9000 of 5 per cent. 20-40-year Putnam independent school district bonds; \$700 of 5 per cent. bonds of Limestone county common school district No. 38; \$500 of 5-10-year district No. 30, and \$396 district No. 52 10-20-year 5 per cent. Coleman county common school district bonds; \$17,000 of 5 per cent. 10-40-year Palestine public park bonds; \$9000 of 5 per cent. 10-40-year Palestine fire equipment bonds; \$2000 of common school district No. 46 and \$500 of school district No. 11 Rusk county schoolhouse 5 per cent. 15-20-year bonds; \$20,000 of 5 per cent. 40-year Zavala county common school district No. 7 schoolhouse bonds; \$20,000 of Aransas Pass school bonds.

Tex., Austin.—Press dispatches state that \$1,200,000 of 3 per cent. 20-40-year Texas refunding bonds are now ready for sale.

Tex., Burnet.—Burnet county is reported to have voted \$12,000 of bridge bonds.

Tex., Cason.—Jas. L. Russell, secretary School Commissioners, writes that bonds have been voted, but will be contested.

Tex., Dallas.—Reported that all bids received for the \$650,000 of municipal improvement bonds were rejected.

Tex., Midfields.—Reported that school bonds are to be issued.

Tex., Munday.—Reported voted: \$5000 of street improvement and \$10,000 of water-works bonds.

Tex., Nacogdoches.—A movement is reported under way in Nacogdoches county to hold an election to vote on \$75,000 of courthouse and \$25,000 of jail bonds.

Tex., San Augustine.—Reported voted: \$25,000 of water-works bonds.

Tex., Terrell.—Official: W. F. Allen may be addressed regarding \$8000 of 5 per cent. 15-40-year light and water-plant bonds; voted last July.

Va., Crewe.—Official: City is offering for sale \$25,000 of 5 per cent. 20-year electric-light and water bonds. Address C. E. Wilson, chairman finance committee.

Va., Harrisonburg.—The Town Council is reported to have authorized \$20,000 of 10-year hospital bonds.

Va., Waynesboro.—City is reported to have sold \$8000 of 5 per cent. 10-30-year water extension bonds.

Richmond, Va.—Official: It is intended to hold a meeting on November 3 to discuss the advisability of issuing \$50,000 in bonds for the improvement of roads in Forest district, Bedford county. The question will have to be submitted to a vote of the people before any bonds can be issued; P. St. J. Wilson is Commissioner Commonwealth of Virginia State Highway Commission.

W. Va., Moorfield.—Reported that an election is to be held in Hardy county to vote on \$12,000 of courthouse bonds.

W. Va., Moundsville.—Official: October 15 city voted \$166,900 of 5 per cent. sewer system bonds; denomination \$1000, except one of \$300; maturity April 1, 1921. Address Mercantile Banking & Trust Co., bond commissioners, Moundsville.

Crewe, Va., is offering for sale \$25,000 of 5 per cent. 20-year electric-light and water bonds. Further particulars will be found in the advertising columns.

FINANCIAL NOTES.

The First State Bank of Talequah, Okla., is reported to have increased its capital from \$25,000 to \$40,000.

The Farmers' Bank of Pendleton, W. Va., is reported to have decided to increase its capital from \$25,000 to \$50,000.

The Bank of Commerce at Frederick, Okla., according to press dispatches, has decided to increase its capital from \$10,000 to \$40,000.

The Clifton Forge National Bank of Clifton Forge, Va., proposes, it is stated, to increase its capital from \$50,000 to \$100,000.

The Bank of Commerce at Paragould, Ark., according to press dispatches, proposes to increase its capital from \$75,000 to \$100,000.

The People's National Bank of Charleston, S. C., according to press dispatches, is considering the question of increasing its capital from \$300,000 to \$500,000.

Directors of the Cottonport Bank at Cottonport, La., have, it is reported, decided to increase the capital to \$50,000 and form the Cottonport Bank & Trust Co. It is stated a branch will also be established at Plaquemine, La.

Since March 24, 1910, the Attorney-General of Oklahoma has approved 278 county, municipal, city and school district bond issues in that State, to the amount of \$4,929,243.68, most of which goes for civic improvements, and there are pending \$500,000 more, which are in process of issuing. The office is also now in touch with another \$500,000 of bonds proposed.

OKLAHOMA CITY INDUSTRIES.

Seven Plants to Be Added Shortly to Its Equipment.

[Special Cor. Manufacturers Record.]

Oklahoma City, Okla., October 28.

Adding to the manufacturing industry of Oklahoma City, seven new factories have contracted to locate in the metropolis. The Stevenson-Clary Manufacturing Co. of Des Moines, Iowa, has purchased an entire block of ground from Scott-Braden Company on East Grand avenue, already has machinery on the ground and will begin at once the erection of a factory building to manufacture hay rakes, garden cultivators, stackers, shellers and hardware specialties. This company has been at-

tracted to Oklahoma City by the rapid development of the industry of alfalfa raising, many of the implements that it manufactures being of the kind necessary to handle the large forage crops of Oklahoma. The company will be ready to sell its products about the first of the year.

The Oklahoma & Fort Smith Traction Co. was instrumental in securing the establishment of the half-dozen institutions that will be a part of the manufacturers of this city in the near future. Perhaps the most important of the six factories that have contracted to locate here is the piano factory of the Weber Company, one of the Webers having decided to make his home in this city in order to handle the business. The factory will be 200x50 feet, fireproof, two stories in height, and will employ 75 men. A refrigerator works will locate in this city next month, and when open for operation will employ 100 men. A specialty will be made of manufacturing appliances for the cooling of rooms in homes or stores and for the making of ice at home.

Adding about 50 men to the working force of this city, a brass works will be established to provide castings, valves and fittings that are used in machine and railroad shops, as well as for general purposes.

A factory for manufacturing mill ma-

chinery is another of the group. It will have about 40 workmen, and will turn out machinery that will be used by farmers for crushing corn, wheat and alfalfa, and machinery will also be manufactured for mills. Rock crushers and cement manufacturing machinery will be made to be sold in Oklahoma and the Southwest. A fertilizer factory, the first in this section, will be built to supply the trade of the Gulf States. Street sweepings will be used to make fertilizers, being mixed with phosphates and limestone.

To manufacture mirrors 35 men will be used in the new factory that will commence business about January 1. The trade of the Southwest will be supplied from this point.

Dr. Alexander C. Potter, consulting engineer, New York city, has been awarded the contract for the revision of Oklahoma City's water system, i. e., the projecting of extensions and working up a sufficient water supply, together with present and additional supplies. The contract was awarded by the Mayor after a recommendation from the water committee. The contract has been signed up for a consideration of \$3000. Under Dr. Potter's plan the entire system of purification, filtration and source of water supply will be en-

larged considerably. While at present the North Canadian River is the only source of water supply, the methods used at present in preserving and providing the supply will be made modern. Dr. Potter will submit a proposal within a few months whereby the remedy desired may be worked out.

Excavating for the Patterson building, to be erected on West Main street, facing east on the terminal grounds of the Oklahoma Street Railway Co., began today under the direction of the firm of Campbell & O'Keefe, who have the contract for the building. When completed the building will be six stories, 50x140 feet, with basement. The plans for the building are for a nine-story structure, but only six will be built at this time, the others to be added in a year or so. The building is being erected by Miss Dora Patterson, who states that the building, while not near the largest or highest in the city, will be one of the best in construction and as modern as science can make it.

The ground floor will be arranged for store rooms and the upper floors for offices. The building will be of reinforced concrete throughout, and when completed will cost approximately \$160,000.

GEORGE B. SAUNDERS.

The Fire Risk

YOUR risk of loss by fire should be reduced to a minimum by telling your agent that you want a policy in a company that, in a hundred years, has never failed to pay a loss. That company is the **Hartford Fire Insurance Company**. Cut out this coupon, sign your name and send it to the agent or broker who places your insurance. It will be notice to him that when your insurance expires you want him to get you a policy in the **Hartford**.

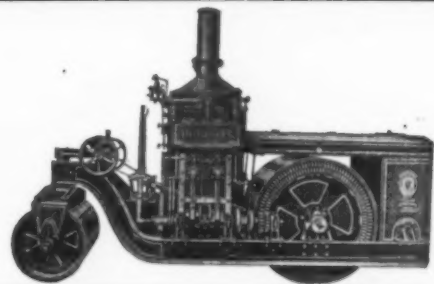
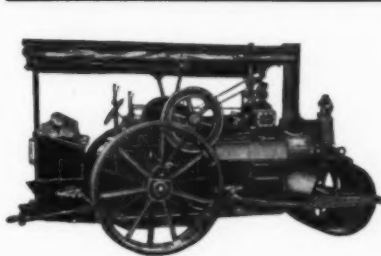
When my insurance expires please see that I get a policy in the Hartford.



Name _____

Address _____

THE IROQUOIS IRON WORKS STEAM ROLLERS



THE AMERICAN STANDARD

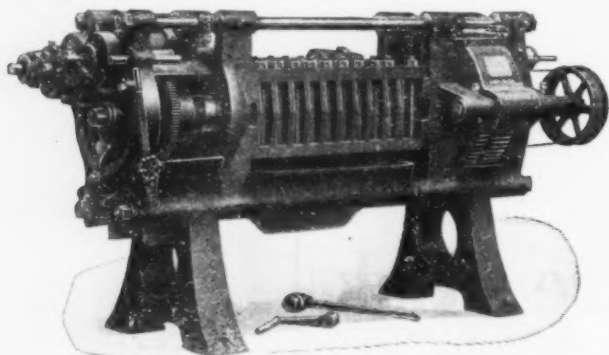
FIFTEEN YEARS EXPERIENCE
BUFFALO, N. Y.

Anderson Oil Expeller Revolutionizes Oil Milling

Although the last 50 years have witnessed wonderful improvements in nearly all kinds of machinery, the development of new appliances for extracting oil from seeds has been practically at a standstill. The hydraulic press and methods used today in most of the best equipped plants are the same in principle as have been in use for hundreds of years. The necessity for improvements upon machinery used in this industry has long been felt, and as a result of years of close study and experimentation to meet this demand the Anderson oil expeller has been perfected.

This new machine is a radical change in oil milling, and is bound to bring about as great a change in this industry as when flour milling was revolutionized by the roller process in place of the runner stone.

The Anderson oil expeller was developed from one which was designed to expel moisture from tankage in packing-houses and which is still in general use. It has been 15 or 20 years since the first work of perfecting the present Anderson oil expeller was undertaken. A great deal of time and money were spent in developing the oil expeller, but it was a thoroughly perfected machine before it was offered generally to the manufacturers of cottonseed oil.



ANDERSON OIL EXPELLER, CLOSED.

The Anderson oil expeller was first used on flaxseed, and is now in general use in the linseed-oil business. It is also used in foreign countries to a considerable extent on cottonseed, rape seed, coconuts, and other oil-bearing seeds and nuts, and is manufactured in Germany under a royalty by the Krupp Company, who supply most of European demand. In this country there are mills using the expellers on peanuts, flaxseed, corn germs, coconuts and cottonseed.

The first use of the machine on cottonseed in a regular plant built for that purpose was about 1902. At this time it was thought necessary to delint the seed in order to successfully work them on the Anderson expeller. Experiments proved that it was not necessary to remove all of the lint on the cottonseed; in fact, that seed could be worked successfully without removing any of the lint left by the regular gin, and that the amount of lint on the seed did not affect the amount of oil extracted, but only the capacity of the machine.

No serious effort was made to sell Anderson expellers generally to the manufacturers of cottonseed oil until 1906, when about 30 machines were installed in various mills, most of them being in Texas. Since that time the sales to cottonseed-oil mills have been steadily increasing, and there are now in the cotton States 48 mills equipped with the Anderson expeller, using a total of 150 machines. Some of these mills are located in every cotton State, there being 16 in Texas, 4 in Mississippi, 4 in Alabama, 10 in Georgia, 1 in Arkansas, 1 in Tennessee, 4 in Louisiana, 1 in Florida, 2 in North Carolina, 2 in South Carolina and 3 in Oklahoma.

On account of the cake made by the Anderson oil expeller being in a different form from the meal and hulls made by the hydraulic process, it has been put on the market under various names, including "Cold Pressed Cake," "Caddo Cake" and "Ko-Pres-Ko Kake." The feeders seem to prefer the cottonseed product in the shape the expeller leaves it to meal and hulls, and they have consistently paid a price that nets the mills more for the expeller cake from a ton of seed than they would get for the meal and hulls from a ton of seed. They pay a higher price for the cold pressed cake than the value would appear to be on the basis of the protein contained therein when compared with the protein in cottonseed meal. The reason for this is that the nutritious part of the expeller cake is in a better shape for the cattle to assimilate it than in the meal, on account of the expeller cake being uncooked, while the meal has been cooked from 30 to 40 minutes.

The supply of cold pressed cake in the past three or four years has never equaled the demand. It has made a permanent place for itself in the Northwestern States, Kansas, Nebraska, Iowa and Missouri using

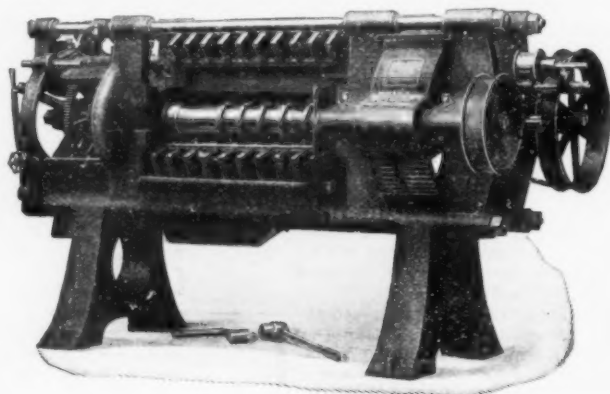
large quantities every year. One broker alone handled about 1500 carloads last year and then did not supply all the demand he had for it. In sections where expeller mills are located a good local demand has always been found as soon as the real merit of the expeller cake was discovered.

The cake is not a balanced feed, but is used in connection with some forage, as it is too concentrated to feed by itself. Fifteen hundred pounds of it (the amount usually figured as obtained from a ton of seed) is equal to about 850 pounds of prime meal and 750 pounds of hulls. The usual proportion of meal and hulls in a balanced feed is one part of meal to four parts of hulls.

The oil made on the expellers is of a better quality than from the same seed when worked by the hydraulic process. Sound seed always makes either prime or choice oil. There is no way in which the oil can be damaged in the process of extraction as can be done by improper cooking in the hydraulic. The oil has a lower refining loss than when made from similar seed on hydraulic presses, and it can always be bleached. Many refiners recognize the superior quality of oil manufactured on the expellers and make a special effort to secure "Cold Pressed Oil," often paying a bonus to secure it.

If the product from the seed is to be used for fertilizer, it is a question whether to put the whole cake in the ground if the hulls could be taken out and only the meal used, although many planters think that the hulls are a considerable benefit to the soil in loosening it up as well as for the potash contained. But expellers are now being installed to work the meats of the seed only after they have been separated from the hulls in the same manner as is done in the hydraulic mills. When this method is used the cake made by the expeller would not only have the same chemical properties as ordinary meal, but would also be much brighter in color. Where the meats only are worked the capacity of the machine is practically doubled.

Some of the advantages of the expeller over the old way of working seed are that the process is much simpler and the results obtained do not depend so much on the oil-making ability of the superintendent in charge. A number of machines necessary in a hydraulic mill are not used in the expeller mill. There is no pressroom labor needed, and, with the exception of the superintendent in charge, no skilled workmen are required in the entire plant. No press cloth is used, and this one item in the hydraulic



ANDERSON OIL EXPELLER, OPEN.

mill, it is generally conceded, will average 25 cents for each ton of seed worked. An expeller mill requires no steam, and for that reason some of them are run exclusively by water power and some by electric power. To increase the capacity of a hydraulic mill it is necessary to change practically all of the machinery except the presses and former, but an expeller mill, as it is made up of a number of units, can be enlarged as much as desired by simply adding more expellers. The results obtained from an expeller mill compare favorably in every respect with a hydraulic mill, as much oil is obtained, the grade of oil is better and the cake sells for a higher price than meal and hulls.

The Burruss Engineering Co. of Atlanta, Ga., are sales agents for the Anderson oil expeller, but the States of Texas and Oklahoma are handled by the Western Engineering Co. of Dallas, Texas.

Six years ago the Burruss Engineering Co. was organized for the purpose of selling and erecting oil mills, but at this time Mr. J. C. Burruss, the president, had been in the same line of business for nearly 15 years, and represented one of the oldest and best companies engaged in manufacturing hydraulic oil-mill machinery.

Burruss Engineering Company
Atlanta, Ga.

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